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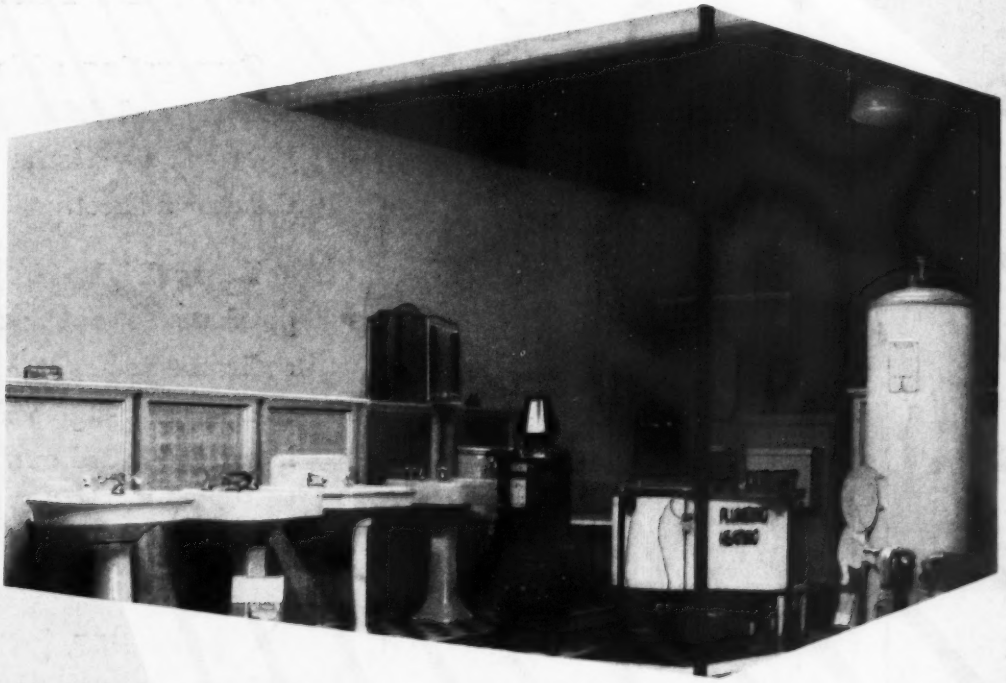
DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

MARCH 7, 1931

From the electrical industry comes expert advice —

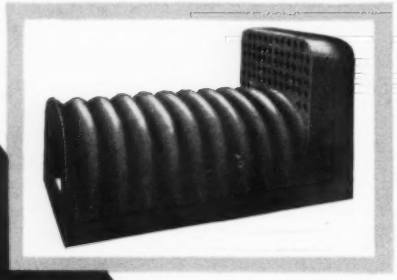


Command Attention with Proper Window Lighting

KEWANEE

Type "C" STEEL BOILER

The Crown Sheet is Corrugated and "Right-Side-Up"



That means more heating surface directly in contact with the fire's greatest heat — insuring exceedingly *quick steaming and more complete absorption* of the heat by the water.

Corrugating adds strength against bending and deflection so that *all stay bolts can be eliminated* from the top of the crown sheet.

Being Right-Side-Up there are no *pockets to catch and collect mud*, sediment and soot—such foreign matter naturally falling to the bottom where it is easily washed out.

For COAL—OIL—GAS. Sizes to heat 2300 to 33,000 square feet of radiation.

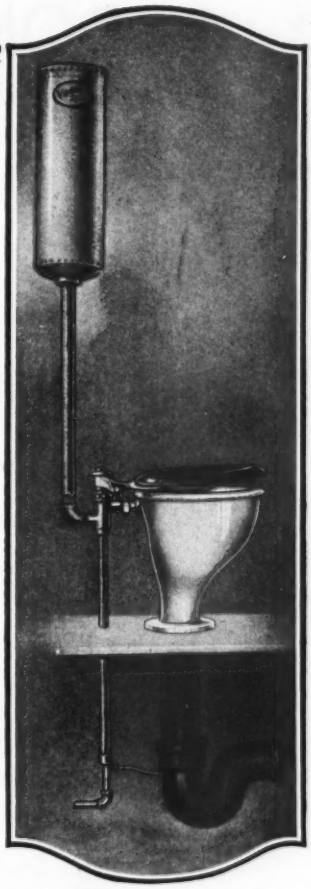
KEWANEE BOILER CORPORATION
division of American Radiator and Standard Sanitary Corporation
KEWANEE, ILLINOIS
MEMBER OF STEEL HEATING BOILER INSTITUTE
Branches in Principal Cities

THINGS ARE NOW BEGINNING TO OPEN UP FOR FROST-PROOFS—BOTH CLOSETS AND HYDRANTS . . .

DURING the winter months thousands of dollars in profits have been piling up for plumbers who sell and install VOGEL Frost-Proof Closets and Hydrants.

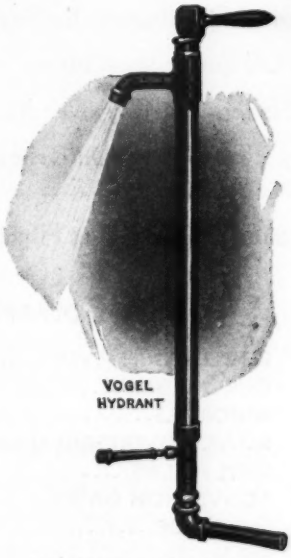
Everybody who has had trouble with closets freezing, or pipes bursting—and there are thousands—is a real prospect for Vogels. They won't take a chance on this happening again, that's why they are ready to install VOGEL Frost-Proof Closets and Hydrants.

Folders and blotters sent out with your mail will help you to line up these profitable jobs. Tell us how many you need. They are imprinted with your name and address of course.



NUMBER ONE VOGEL FROST-PROOF CLOSET

Simple in operation. Sturdy in construction. Half a million in operation.



VOGEL FROST-PROOF HYDRANT

Don't Neglect This Market

Private and public garages, yards of all sorts, farms, dairies, are all good prospects for Vogel Frost-Proof Hydrants. A great convenience any place.

See inside back page for VOGEL PATENTED *Seat-action closet Advertisement*

JOSEPH A. VOGEL COMPANY

Wilmington, Del. St. Louis, Mo.

VOGEL PATENTED *Frost-Proof* PRODUCTS

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

Established 1889

Vol. 134, No. 5 | March 7, 1931 | Whole No. 1938

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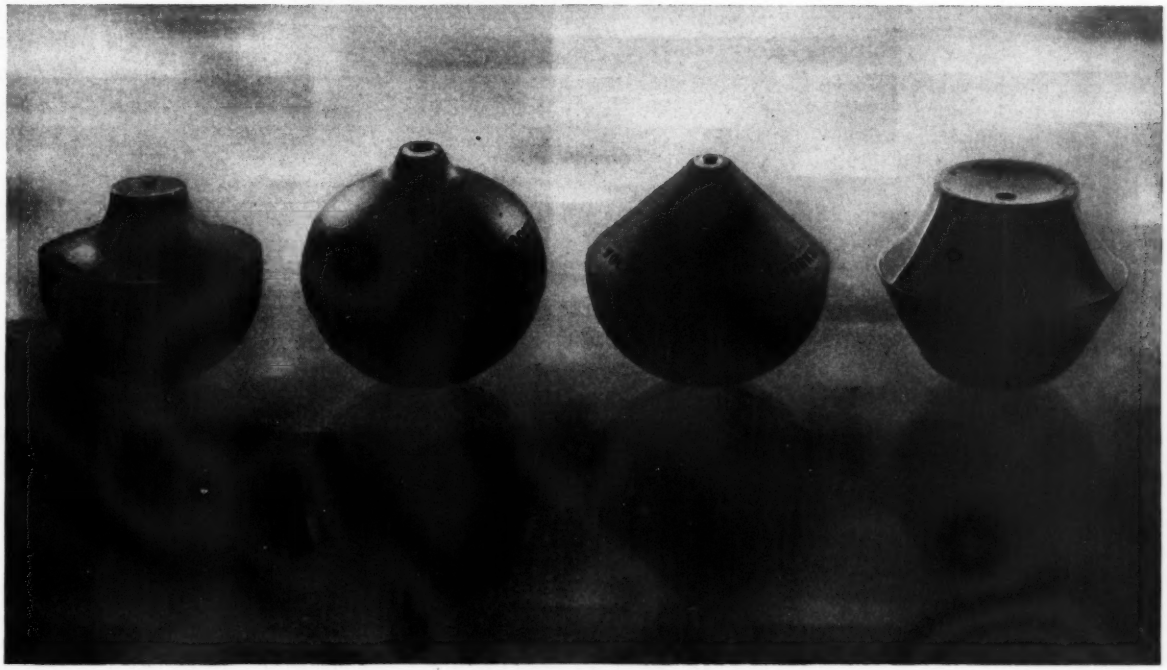
WOLVERINE

DEPENDABLE TANK BALLS



DIFFERENT IN DESIGN ...BUT NOT IN QUALITY...

The value of a Wolverine Tank Ball is proven by a long life of service that has rightfully earned it the name Dependable . . . . . .

Only a tank ball of the soundest construction, the most intelligent design and the highest grade of rubber could so long resist the ravages of all water conditions . . . . the continual lifting and dropping . . .

A Master Plumber may prefer one design over another . . . . but he knows all WB Tank Balls are Dependable . . . . . .

WOLVERINE BRASS WORKS

GRAND RAPIDS - - - - - - - MICHIGAN

WB

We Sell the Retail Plumbing Trade Exclusively

Between Ourselves

THE "Plumbing and Heating Merchandising" section this time carries odds and ends of effective selling ideas, as developed by contractors the country over. Electric signs, trucks, a most unique "action" trademark and a fine water heater window display are among the practical suggestions the section contains.

Your Editor

FROM Nela Park—that center of lighting practice and experimentation—we have secured two articles, the first of which appears in this issue: "Command Attention with Proper Window Lighting." The information given was developed out of an experience far wider than any single individual might hope to gain. Tests, observations, and knowledge of the means by which lighting effects may be secured, all have gone to the working out of this material. The article, which will follow the one in this issue, has to do with color lighting.

MINNEAPOLIS has adopted a model oil burner ordinance. Plumbing and heating contractors are accustomed to working with codes, and here is another one that covers the extension of his activities into the field of a heating specialty. Made up as the ordinance is of the best practices in oil burner installation, it is a mine of information which the contractor may apply to the installation of any oil burner job. Naturally, the safety factor is strongly in evidence—a fact that should reassure any prospective oil burner purchaser, when informed that these are the practices followed.

INDUSTRY is continually on the look-out for ways of cutting down operating costs, and this is a spot where the heating contractor can step in and offer constructive advice by showing how waste steam can be turned into money. Condensate is already being used in many ways, making ice and furnishing a supply of hot water, being an example of its diversified uses, and there are many other industrial requirements for distilled water, for which condensate could be utilized. Of late, increased attention has been given this subject, and at the recent convention of the American Society of Heating and Ventilating Engineers, a complete section of the program was devoted to its discussion. The paper read at this meeting has been condensed, to bring out the points of greatest interest to the readers of DOMESTIC ENGINEERING. The title of the article is, "Using Waste Steam for Heating."

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe.

"YOUR review of Plumbing and Heating as started in the January 24 issue is certainly a great idea. It's full of ideas that we might have known about, but have forgotten as time went along."—Arthur J. Larson, Stark-Davis Co., Portland, Ore.

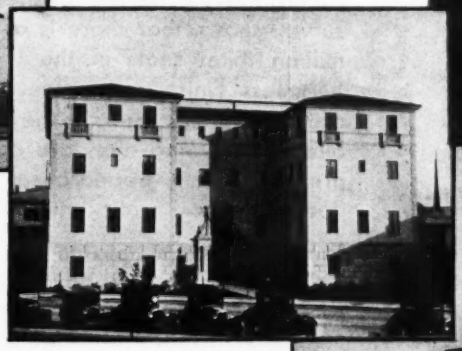
CODES furnish an inexhaustible source of comment, and, typical of the service DOMESTIC ENGINEERING endeavors to render—the dissemination of usable information—is the code tabulation in this issue, which indicate a wide variation in venting practice. For those interested just now in codes, here is a nation-wide fund of data.

A BATH building was opened a short time ago at Saratoga Springs, N. Y., which is unusual in many ways from the standpoint of sanitary and plumbing installation and equipment. There are about one thousand different springs at Saratoga, each one different as to chemical analysis, but all high in carbonic gas. The conveying of these waters in pipes has always been a problem, for their pitting and scaling effect upon most metals is very pronounced. Consequently, the plumbing installation was a matter of adapting the equipment and piping, so as to retain the original qualities of the water, instead, as in the majority of cases, of treating the water to minimize piping and equipment problems. To treat the water would eliminate its curative and alleviative powers. F. N. Bolles tells how the problem was met, in an article commencing on page 43 of this issue.

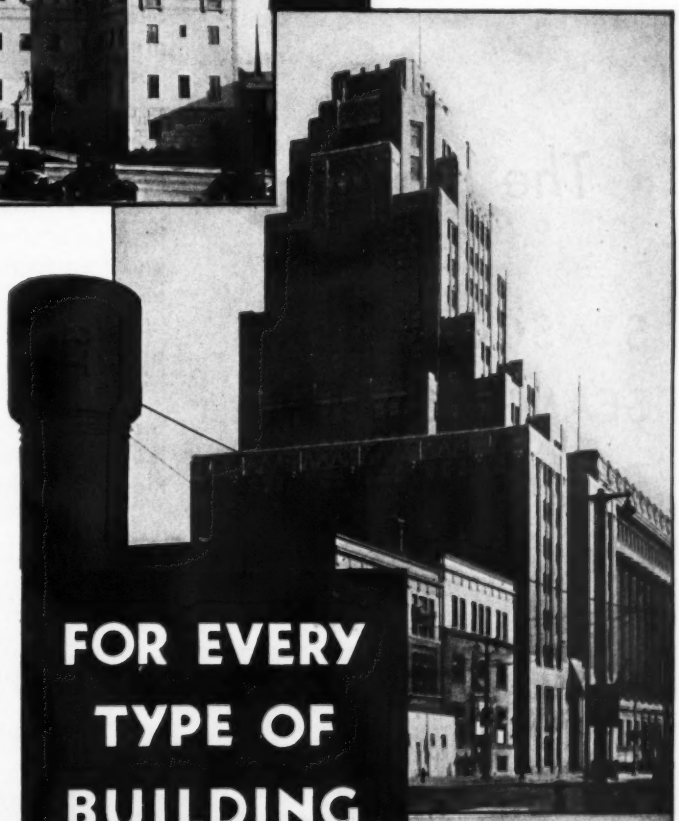
IN the issue of March 21, there will appear another of the inimitable Dolan & Olson adventure stories. The boys have been having some interesting trouble calls on heating plants which, what with handy men and owners who like to putter around, got themselves put in rather badly. The results made for work—and Jerry tells about it in his usual lively fashion. Watch for their story.

Residence of A. C. Shepard, Los Angeles, Calif. Sumner Hunt, Architect. Toncan Iron Pipe for plumbing and heating.

Hall of Justice, Pasadena, Calif. Toncan Pipe for vents and steam returns.



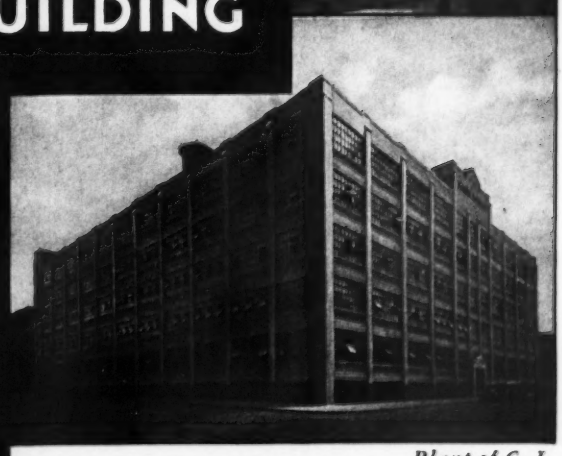
Milwaukee Gas Light Company Building, Milwaukee, Wisconsin. Eschweiler and Eschweiler, Architects. Toncan Iron Pipe for vents.



FOR EVERY TYPE OF BUILDING

ECONOMY in building through the use of longer lasting materials is confined to no one type, no one size of structure. Modest little homes, municipal buildings in which taxpayers' money is invested, office buildings, industrial plants —all benefit through the use of Toncan Iron Pipe and its ultimate economy in service.

It makes little difference what class of work you do—your reputation and your future business growth depend largely on the work you do and the materials you recommend. Neither you nor any other contractor can afford to use pipe of questionable life because, in the end, the blame for pipe failure will fall where it rightfully belongs. That's why Toncan Iron Pipe is rapidly becoming a favorite specification—because this alloy of refined iron, copper and molybdenum resists rust and corrosion and removes that uneasy state of mind—because it lasts longer in plumbing and heating lines and is a genuine economy.



Plant of C. J. Tagliabue Mfg. Co., Brooklyn, N. Y. Toncan Iron Pipe for Plumbing & Industrial Piping.

REG. U.S. PAT. OFF.
TONCAN
COPPER MO-LYB-DEN-UM
IRON PIPE

REPUBLIC STEEL CORPORATION
GENERAL OFFICES: YOUNGSTOWN, OHIO

The market for STASCO EMPIRE SEAMLESS FINISH TOILET SEATS

STASCO Empire Seamless Finish toilet seats are one of the most profitable items that you sell.

Almost every home is a prospect for a Stasco seat. A recent survey shows that there is a yearly market for over two million toilet seats in the United States. Stasco Empire Seamless Finish seats meet every requirement of these prospective customers — they are priced within reach of almost everyone—they are guaranteed for 5 years—they are attractive in appearance. Stasco seats offer you opportunities for profit unequaled by any other product.

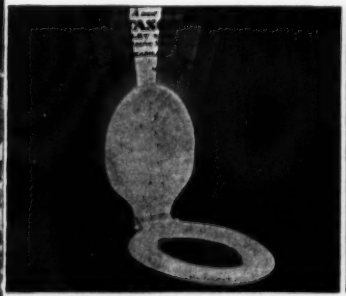
In addition to this, Stasco has launched the biggest campaign of sales and advertising helps in Stasco history to assist you in reaching this profit-making market. This campaign includes full-page space in The Saturday Evening Post, colorful window and counter displays for your shop, and free folders with your name imprinted on them for distribution to your customers. "The Entering Wedge", a book of sales helps, has also been prepared for Stasco dealers. You will find it filled from cover to cover with helpful, profit-building sales suggestions.

Stasco Empire Seamless Finish toilet seats are sold by leading jobbers everywhere. Write for our Sales Help Plan and new catalogue today.

STANDARD TANK & SEAT COMPANY

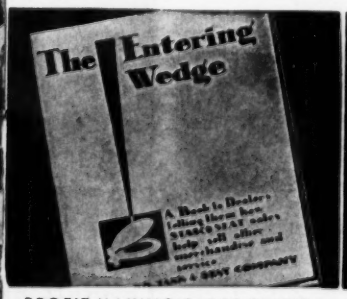
CAMDEN, NEW JERSEY

How Stasco is Helping the Master Plumber



WINDOW AND COUNTER DISPLAYS

DIRECT BY MAIL



PROFIT-MAKING SALES PLANS

NATIONAL ADVERTISING

Stasco Advertising in The Saturday Evening Post

reaching 3,000,000 *families*

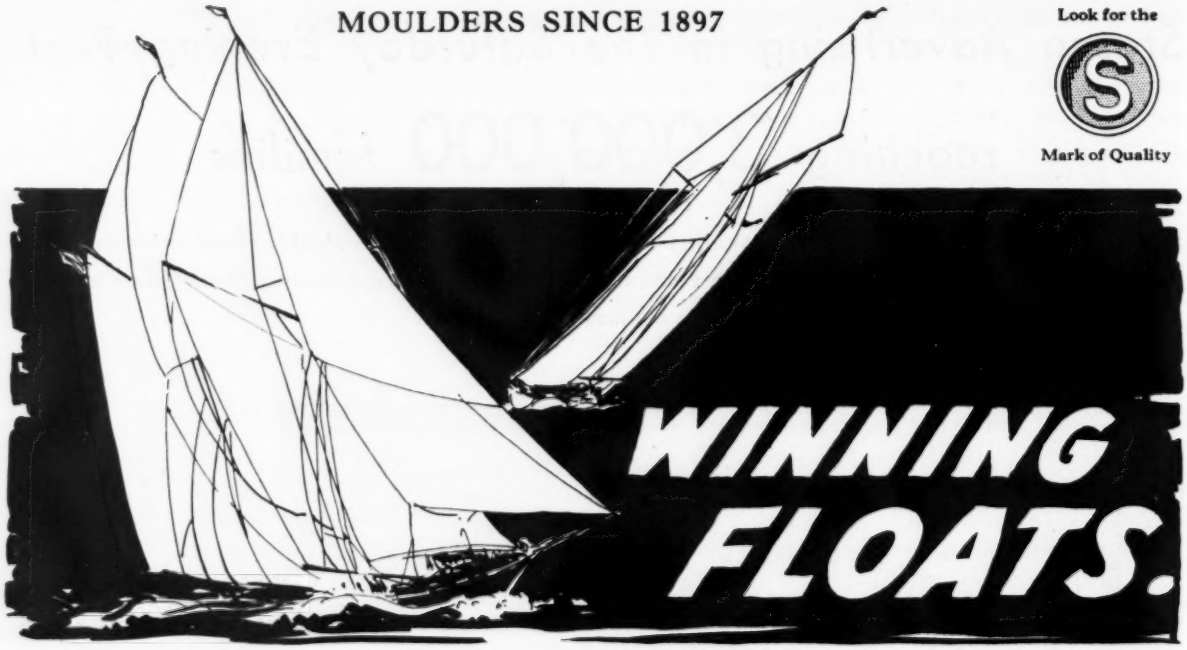
Stasco full-page advertising in The Saturday Evening Post will help the Master Plumber increase his sales and profits. This advertising tells the consumer that Stasco Empire Seamless Finish Seats are for sale *by the master plumber.*

THE SATURDAY EVENING POST
EMPIRE SEAMLESS FINISH MAKES POSSIBLE A NEW INEXPENSIVE SANITARY TOILET SEAT
This illustrates how the continuous protective coating of Empire Seamless Finish effectively seals the seat against germ-laden moisture. There are no gaps or joints in this surface.
A new toilet seat—spic and span and glistening white—with a new seamless finish that eliminates the dirt-collecting laps and joints found in old style white and colored seats.
Made from pure Pyralin dissolved and applied in liquid form, Empire Seamless Finish forever seals these new seats against germ-laden moisture. Sanitary—and as easily cleaned as a china dish with an occasional wipe of a damp cloth. A beautiful, modern toilet seat of the highest quality—guaranteed and at a price less than you ever dreamed it could be bought for.
Here are all of the features of the expensive seat you've always wanted for your bathroom—in white and an attractive range of modern colors. Easily installed—made to fit any standard make of toilet bowl—and at a price that makes not having one an extravagance.
Your nearest plumber can supply you.
STANDARD TANK & SEAT CO.
CAMDEN NEW JERSEY
$5.00
$6.50
MODEL NO. 358—In White
A sturdy oval seat. Fits any standard measure, oval bowl. Empire White Seamless Finish. Also in colors at slight additional cost.
MODEL NO. 196—In White
Designed to fit any standard bowl. Note the hinges of this seat are covered with Empire Seamless Finish. Available in colors at slight additional cost.
STASCO TOILET SEATS
AT YOUR PLUMBER'S

MOULDERS SINCE 1897

Look for the

Mark of Quality



STOKES QUALITY AND STOKES EFFICIENCY ALWAYS WINS!

Jos. Stokes RUBBER CO.

Trenton N. J.

Canadian Plant: Welland, Ontario

When you sell or install a Stokes Hard Rubber Float you win the support of your customer for future business. Hard Rubber does not rust or corrode, and *Stokes* Hard Rubber Floats are so strongly made that *they will not break* under any ordinary conditions, and can be guaranteed for the life of the tank.

Write NOW for samples and prices.

HARD RUBBER IN EVERY CONCEIVABLE FORM — MOULDERS OF PLASTICS

How I sold the Homeowners a new Bathroom

A Remodeling Talkie
Featuring
A. Plumbing Contractor
and
Mrs. Any Homeowner

Produced in Consumer City by Sherwood Brass Works

Mr. Contractor: Good evening, Mr. and Mrs. Homeowner. I'm wondering if you've been having the same annoyance that a good many people have been having with their toilet tanks. Is there any whistling, gurgling or dripping noise in the tank at any time?

Mr. Homeowner: Oh, not particularly, I guess. Nothing that can do any harm, anyway.

Mrs. Homeowner: Not when you're not in the house all day, but when you are, there's a lot of annoyance from it. I was going to call you some time ago about that, Mr. Contractor, but just never got around to it. Can you stop it?

Mr. Contractor: Very effectively. This Sherwood Ball Cock will do it. It closes against any city water pressure without whistling or gurgling or leaking. That will put a permanent stop to the noise.

Mrs. Homeowner: Well, put it in, then. How much does it cost?

Mr. Contractor: Not a fraction of what it will save you in comfort and water costs. I'll have my man install it tomorrow.

(Next night.) Mr. Homeowner: Say, that thing the plumber put in really does the work, doesn't it? This place is noticeably quiet tonight.

Mrs. Homeowner: It certainly is a relief. You know, I have been thinking that perhaps it would be a good idea to get that man's figures on new plumbing—

Mr. Homeowner: Oh, what we have is good enough.

Mrs. Homeowner: It certainly is not. Mr. Contractor came in with his man today and was telling me about the new colored fixtures. I made an appointment with him to bring you over to his place tonight. Suppose you get your coat and hat on?

Mr. Homeowner: That'll cost us a lot of money. Can't we wait—

Mrs. Homeowner: That's what you said about the fitting he put in today. It will cost more than a new suit, perhaps, but it will mean much more than its cost. Come on.

(At the show room.) Mrs. Homeowner: Good evening, Mr. Contractor. We'd like to see those new fixtures. Mr. Homeowner decided on the way over that he'd like a new bath room.

SHERWOOD BRASS WORKS

Jefferson and Mt. Elliott Aves. **Detroit, Michigan**

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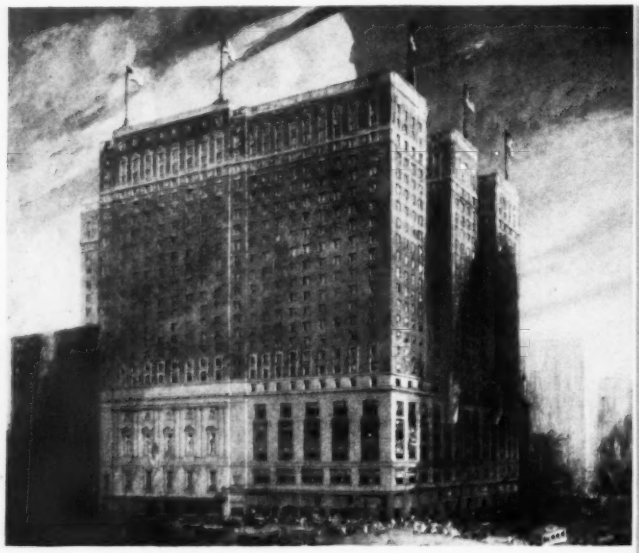
J. A. Riordan Co., (Inc.), 1600 E. 7th St., Los Angeles — 303 Colman Bldg., Seattle
E. S. Thompson, 2401 Chestnut St., Philadelphia Fred G. Hoffman, 831 Edgewood Ave., Trenton, N. J.
Fred S. Wilsey, Plymouth Bldg., Minneapolis

SHERWOOD Ball Cocks

TANK REGULATORS

THE PALMER HOUSE, CHICAGO, ILL.



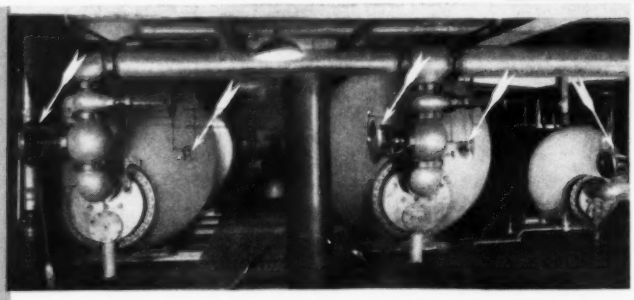
Architects
Holabird & Root

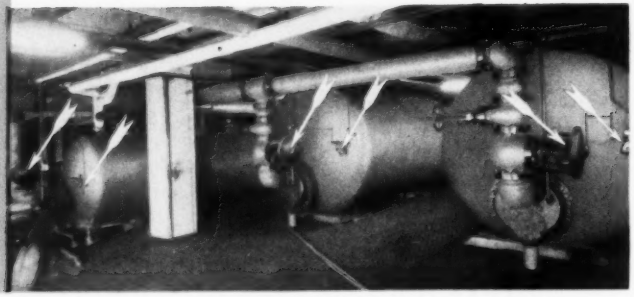
Heating Contractor
Phillips-Getschow Co.

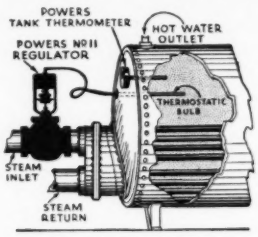
Plumbing Contractor
J. J. Daly

Here is another prominent hotel using Powers Regulators to control the temperature of its hot water supply. Long Life—Dependable control—Prompt and intelligent service by engineers in 38 cities—these are some of the reasons for the popularity of Powers products.

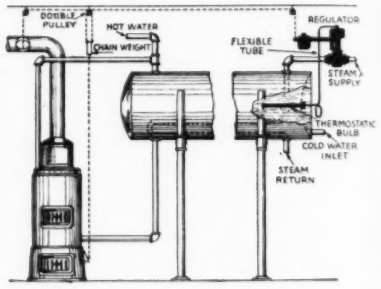
Powers No. 10 Regulators
Compressed Air Operated
Installed on Hot Water Heaters in the Palmer House



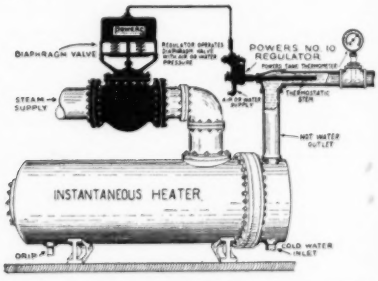




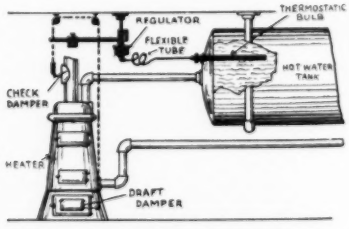
The Powers No. 11 Regulator applied to steam heated hot water tank. Self operating—accurate and durable. *Write for Bulletin No. 2035.*



The Powers No. 12 Regulator for controlling steam coil and auxiliary heater. *Write for Bulletin No. 2035.*



The Powers No. 10 Regulator operated by either compressed air or water pressure for control of large valves, swimming pool heaters, etc. *Write for Bulletin No. 2035.*



The Powers No. 13 Regulator for hot water tank heaters and garbage burners. *Write for Bulletin No. 2035.*

THE POWERS REGULATOR COMPANY

35 years of specialization in temperature control

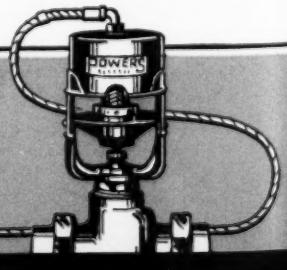
General Eastern Office
137 East 46th St., New York City

General Offices and Factory
2716 Greenview Ave., Chicago, Ill.

Canadian Powers Regulator Co., Ltd.
106 Lombard St., Toronto, Ont.

Offices in 35 other cities—See your telephone directory

POWERS



Safeguard Your REPUTATION With This Device!

If you allow your reputation to be literally pounded to pieces you have no one but yourself to blame . . . Even good material and master craftsmanship used in the layout and installation of the plumbing system are not enough to sustain a reputation where noise has developed in the operation of the system.

It is inevitable that noise occur, sooner or later, in most installations. Noise—water hammer—is quite common. And it's quite human for those who suffer the inconvenience of water hammer to hold someone responsible. Perhaps, it's you.

Even though the noise is not audible, the pipe lines may be damaged by the incessant shocks. Playing safe involves using a simple mechanical device—the Josam-Marsh Shock Absorber. Hook it in the line in any position. The destructive density waves which cause water hammer are diffused by the shock absorber and rebound in diminishing intensity within its diaphragm chamber.

Thoroughly tested. A necessity on the new job, and a good thing to sell and install on existing installations. Not a single plumbing system is exempt from water hammer. A treatise on water hammer and its effects (by a well known sanitary engineer) also complete descriptive matter concerning the Josam-Marsh Shock Absorber await your request.

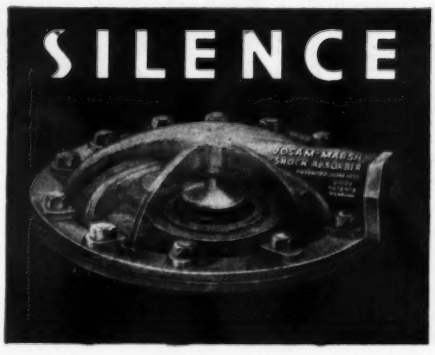
Josam Marsh

SHOCK ABSORBERS

quiet water hammer in pipe lines by diffusing density waves within a diaphragm chamber. Noise is quieted and impact force diffused.

JOSAM-MARSH SHOCK ABSORBERS

quiet water hammer



We will welcome inquiries regarding the use and installation of the Josam Products listed below from Catalog G: Josam Drains for Floors, Roofs, Showers, Urinals, Garages and Hospitals; Josam Swimming Pool Equipment, Josam-Marsh Grease, Plaster, Dental and Surgical, Sediment and Hair Interceptors; Josam-Marsh Shock Absorbers for pipe lines; Josam Open Seat Back Water Sewer Valves; Josam Open Seat Swing Check Valves; Josam Adjustable Closet Outlet Connections and Bends, Water and Gas-Tight.

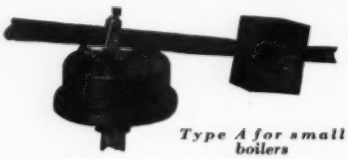
Josam Products are sold by all Plumbing and Heating Supply Wholesalers

JOSAM MANUFACTURING COMPANY
4904 Euclid Building . . Cleveland, Ohio
FACTORY: MICHIGAN CITY, INDIANA
BRANCHES IN ALL PRINCIPAL CITIES

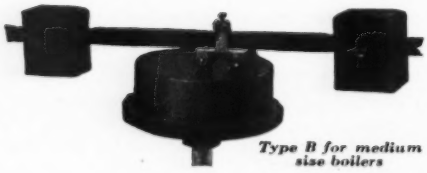
THERE ARE NO SUBSTITUTES FOR JOSAM PRODUCTS

The Operating Efficiency *of a* Good Heating System *is largely a matter of control*

METAPHRAM Damper Regulators

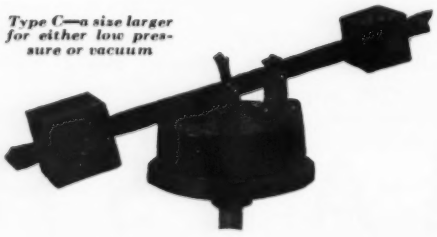


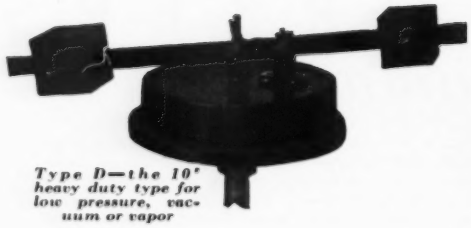
Type A for small boilers



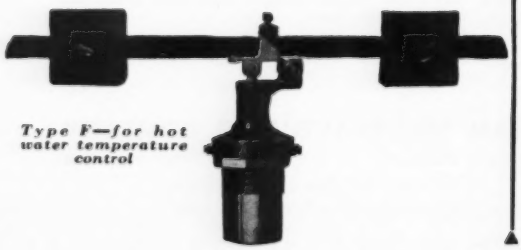
Type B for medium size boilers

Type C—a size larger for either low pressure or vacuum





Type D—the 10" heavy duty type for low pressure, vacuum or vapor



Type F—for hot water temperature control

The best heating system you ever installed won't give continued heat satisfaction if the pressure or temperature delivered by the boiler is constantly fluctuating, or if damper control is a manual operation.

Fluctuations in heat output are eliminated by *good* damper control; but a good damper regulator must be capable of

(1) ***Replacing manual control of draft and check dampers between periods of firing.***

(2) ***Maintaining a rate of combustion to meet heating requirements.***

(3) ***Preventing excessive "lag" or "over-runs" in boiler delivery.***

Every requirement for good damper control on hand fired boilers is met by Metaphram Damper Regulators.

Long life, continued efficiency, extreme sensitivity, and *sufficient power* to raise and lower draft and check dampers on any low pressure domestic heating boiler you may install.

Descriptive bulletins will be mailed on request.

NATIONAL
National Systems of Heat Regulation and Humidity Control, Metaphram Dampers, Metaphram Motors, Industrial Thermostatic Devices, A-Jacks Steam Damper Regulator for high pressure boilers, Metaphram Damper Regulators for domestic steam, vapor, vacuum and hot water heating boilers, Metaphram Furnace Regulators.
METAPHRAM

NATIONAL REGULATOR CO., 2317 Knox Ave., Chicago

Please send us

☐ Bulletin F-100—Type F Metaphram Damper Regulator for hot water boilers.

☐ Bulletin LP-100—Metaphram Damper Regulators for low pressure boilers.

Name.....

Address.....

Town..... State.....

For 10 points where trouble starts there are 10 Solutions . . .

In every shower mixing valve there are 10 points at which trouble can start. In the Crane quick opening mixing valve these trouble points have been overcome by:

1 ***Fool Proof:*** Hot and cold disc screws cannot be reversed. In case supply pipes are reversed, disc holder can be removed by taking out wire loop and reversing disc units. Center piece is notched out and body has lug which fits into notched part.

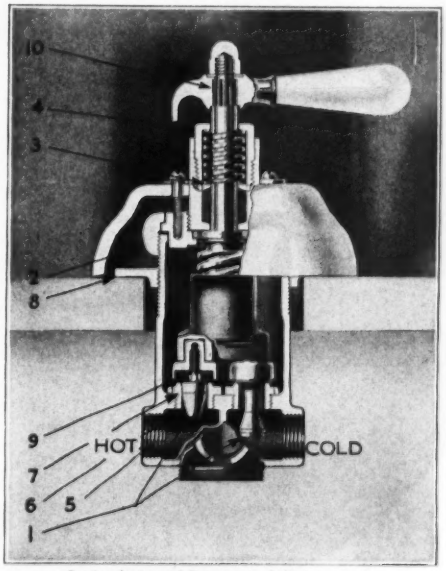
2 ***Union bonnet ring:*** The body of the ring is carried out to the face of the wall and union between centerpiece and body is on face of wall. Any leakage is quickly discovered before harm is done to ceilings or walls. Threads on the union ring do not come in contact with water; therefore there is no liming and the union ring is easy to remove.

3 ***Stuffing box:*** Crane patented self adjusting packing. Wearing of packing taken up by spring.

4 ***Repacking:*** Can be repacked without removing escutcheon.

5 ***Capacity:*** Extra large. Good shower with 4-inch shower head down to 15 pounds pressure at valve.

6 ***Mixing qualities:*** Mechanical conical disc screws assure uniform mix of water and uniform capacity throughout the full range of temperatures. There are no guides or fins on disc screws to jam.



Sectional view of Crane concealed mixing valve

7 ***Seats:*** Renewable seats, full sizes seat bore.

8 ***Accessible:*** All parts renewable from face of wall.

9 ***Discs:*** Encased Crane heavy composition discs; ideal for hot water use.

10 ***Handle fastenings:*** 16-point broaching gives rigid fastening for handle on stem. Also makes handle adjustable to 16 positions. Provides maximum stem strength for handle fastening.

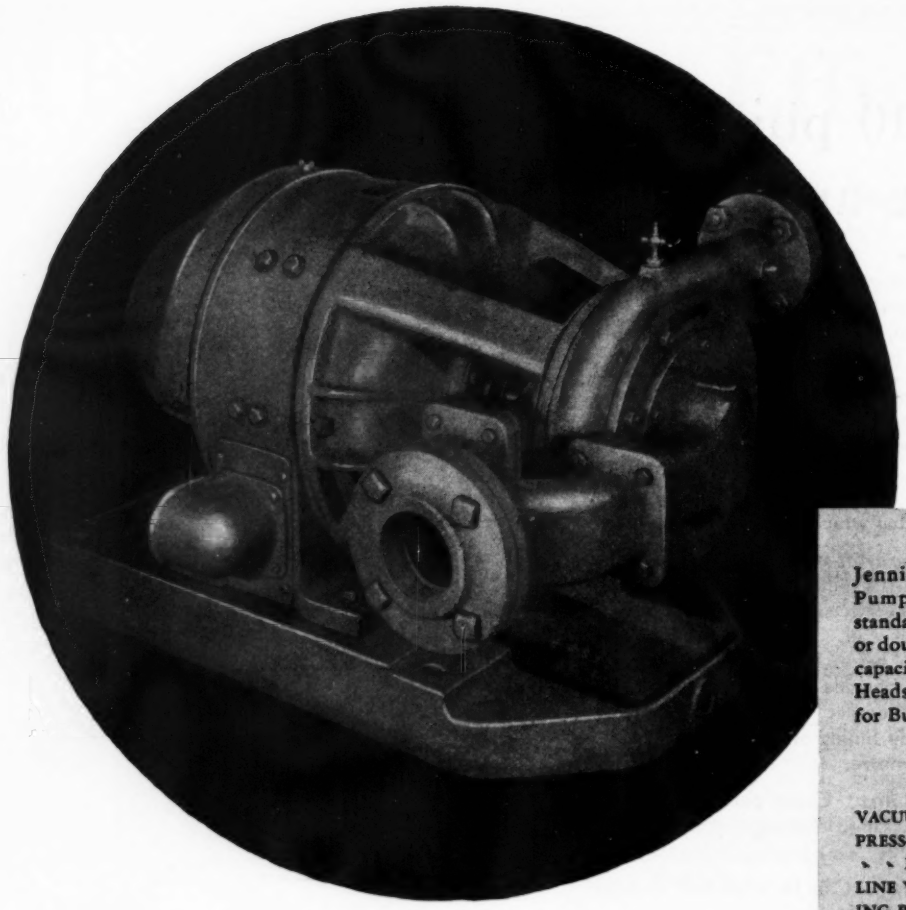
Surely this is a shower mixing valve which you can recommend with the certainty that it will satisfy both you and your customer; you with a fair profit and a quickly made installation; your customer with a lastingly efficient job.

Crane C 4788 quick opening exposed mixing valve

Crane C 4792 quick opening concealed mixing valve

Valves CRANE *Fittings*

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICES: 23 W. 44TH STREET
Branches and Sales Offices in Two Hundred Cities



Jennings House Service Pumps are furnished in standard sizes, either single or double suction type, with capacities up to 1500 g. p. m. Heads up to 300 ft. Write for Bulletin 128.

VACUUM PUMPS AND COMPRESSORS FOR AIR AND GAS • • RETURN LINE AND AIR LINE VACUUM STEAM HEATING PUMPS • • CONDENSATION PUMPS • • FLAT BOX PUMPS • • CENTRIFUGAL PUMPS • • SUCTION (SELF-PRIMING) CENTRIFUGAL PUMPS • • SUMP PUMPS • • SEWAGE PUMPS • • PNEUMATIC SEWAGE EJECTORS

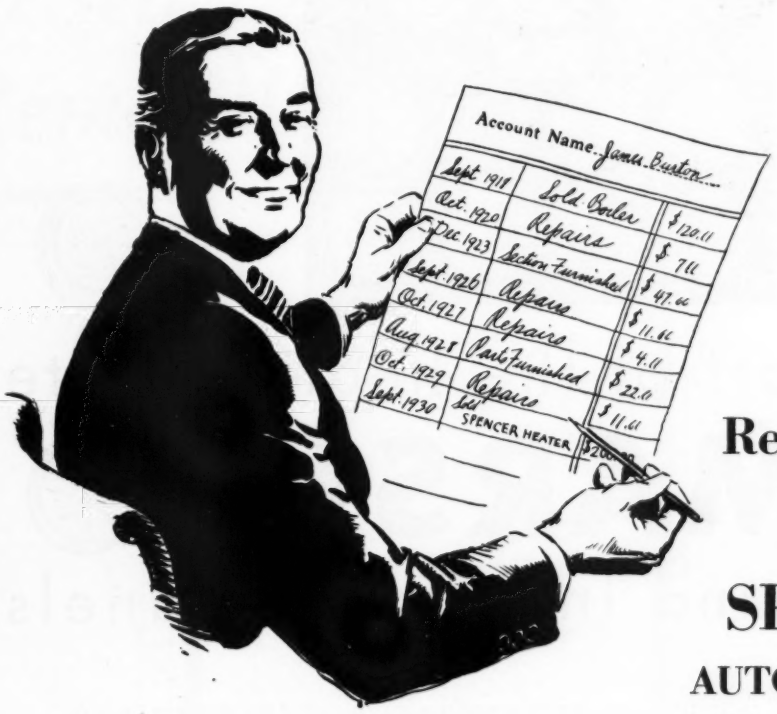
THIS MODERN HOUSE SERVICE PUMP *. . . fits any piping*

SUCTION and discharge connections can be assembled in almost any desired position to conform to piping conditions. The number of fittings and the labor required for installation are reduced to a minimum. ¶ Motor and pump are combined in a single compact assembly. There are no flexible couplings; no bearings in the pump casing; only one stuffing box. Little floor space is required. ¶ For boosting water pressures to supply upper stories of tall buildings, for circulating hot or cold water, for any pumping service where a dependable centrifugal is required, you can rely on the Jennings House Service Pump.

Jennings Pumps

THE NASH ENGINEERING CO 41 WILSON ROAD, SOUTH NORWALK, CONN.

"That's How I Get Business!"


Account Name James Burton
Sept. 1918 Sold Boiler $120.00
Oct. 1920 Repairs $ 7.00
Dec. 1923 Section Furnished $ 47.00
Sept. 1926 Repairs $ 11.00
Oct. 1927 Repairs $ 4.00
Aug 1928 Pair Furnished $ 22.00
Oct. 1929 Repairs $ 11.00
Sept. 1930 Sold SPENCER HEATER

Replacement *with* SPENCER AUTOMATIC HEAT

That cuts fuel bills in HALF

You can get plenty of business the same way, right now; and make money. Find the people on your own books (or somebody else's) whose heating plants have become a liability; old, worn-out boilers that are squandering fuel-dollars. It's easy to sell these owners Spencer Automatic Heat. A Spencer Heater will save them about $6 on every ton of coal; burns No. 1 Buckwheat (or small size coke). In addition, a Spencer will give them uniform, finely balanced, cleaner Automatic Heat. That is why more Spencer Heaters were sold in 1930 than in 1929, Spencer's previous banner year.

SPENCER HEATER COMPANY, Williamsport, Pennsylvania
Spencer Heater Company of Canada, Ltd., Toronto, Ontario

Special Advantages for You

More profit than ordinary boilers.

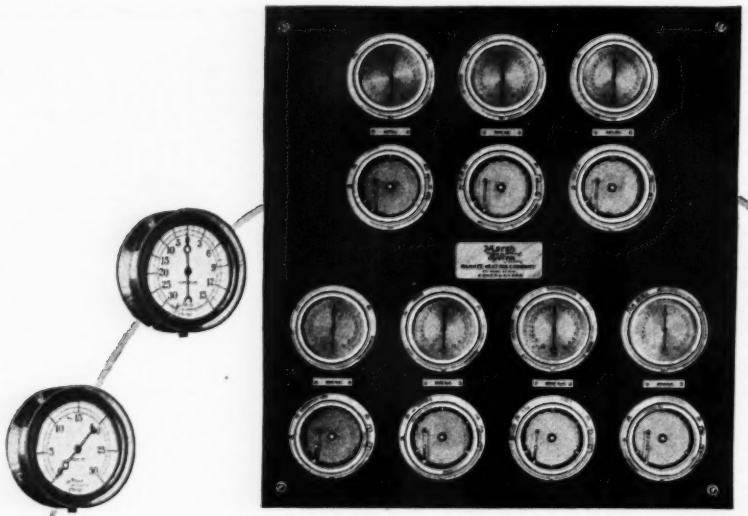
Easiest, quickest to erect.

A complete line for every type of building.

Guaranteed capacities.

Every Spencer installed is a salesman working for you.

SPENCER
Magazine Feed
HEATERS
for steam, vapor or hot water



At the heart of the heating system

MARSH

Gauges and Instrument Panels

Accurate gauges and recording instruments are at the very heart of the modern heating system; play a vital part in regulating its operation with maximum efficiency and economy.

For over sixty-five years, Jas. P. Marsh & Company has produced a complete line of precision instruments in keeping with the high engineering and manufacturing standards of Marsh Heating Systems. Flawlessly designed and carefully manufactured of the finest materials, these gauges and instrument panels have been kept abreast of the rapid march of mechanical progress in heating equipment.

Marsh Gauges have long been supplied as standard equipment by many leading boiler manufacturers. Architects and engineers can assure accuracy of control by specifying them as a co-ordinate part of Marsh Heating Systems.

Marsh Industrial Instruments

JAS. P. MARSH & CO.

(Division of Commercial Instrument Corporation)

HOME OFFICE:

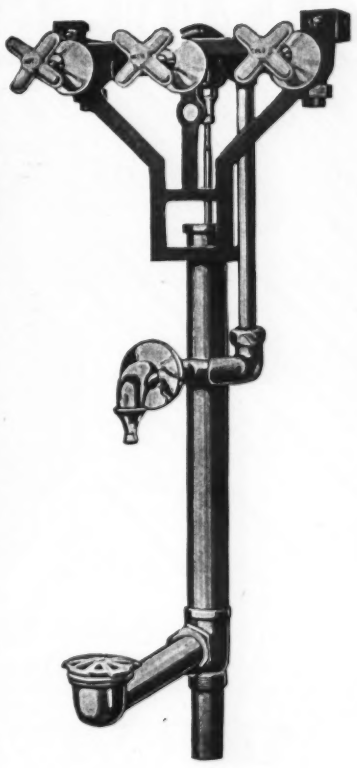
2079 Southport Ave., CHICAGO, ILL.

551 Fifth Ave., New York City 2539 Pennsylvania Ave., N. W.
Bendix Bldg., Los Angeles Washington, D. C.

Sales Offices in principal cities

In Canada: The Jas. Morrison Brass Mfg. Co. Ltd.
93-97 Adelaide St. West, Toronto 2
1190 University St., Montreal 251 Montrose St., Winnipeg

Here's how *to sell those Remodeling Jobs*



Use those repair calls as the opportunity to sell remodeling and use American Brass Goods (bath and kitchen) to show customers how attractive and how efficient both bath and kitchen can be made.

American Brass Goods have occupied a prominent position with contractors, architects and builders for many years. They have served so well, earned such a reputation for general excellence that home owners and tenants, too, have come to demand American quality.

There's plenty of money in the remodeling market and plenty of work. It requires a little selling but with American fixtures to pave the way, the selling is easy.

People like to see the actual thing they're going to get. Of course, you can't carry a bath tub around with you but you can carry an American fixture and it's appealing enough to allow the customer to visualize just what everything will look like when the job is completed.

American design, construction, workmanship and materials can be had only in American goods. Insist upon them from your jobber.

American Sanitary Mfg. Co.

Abingdon, Illinois

SIMPLEX FLUSH VALVES

EASY TO ADJUST TO ANY WATER PRESSURE

THERE are no limitations to The Simplex Flush Valve. It can be adjusted to handle any water pressure. This adjustment is OUTSIDE so that changes are affected quickly and easily.

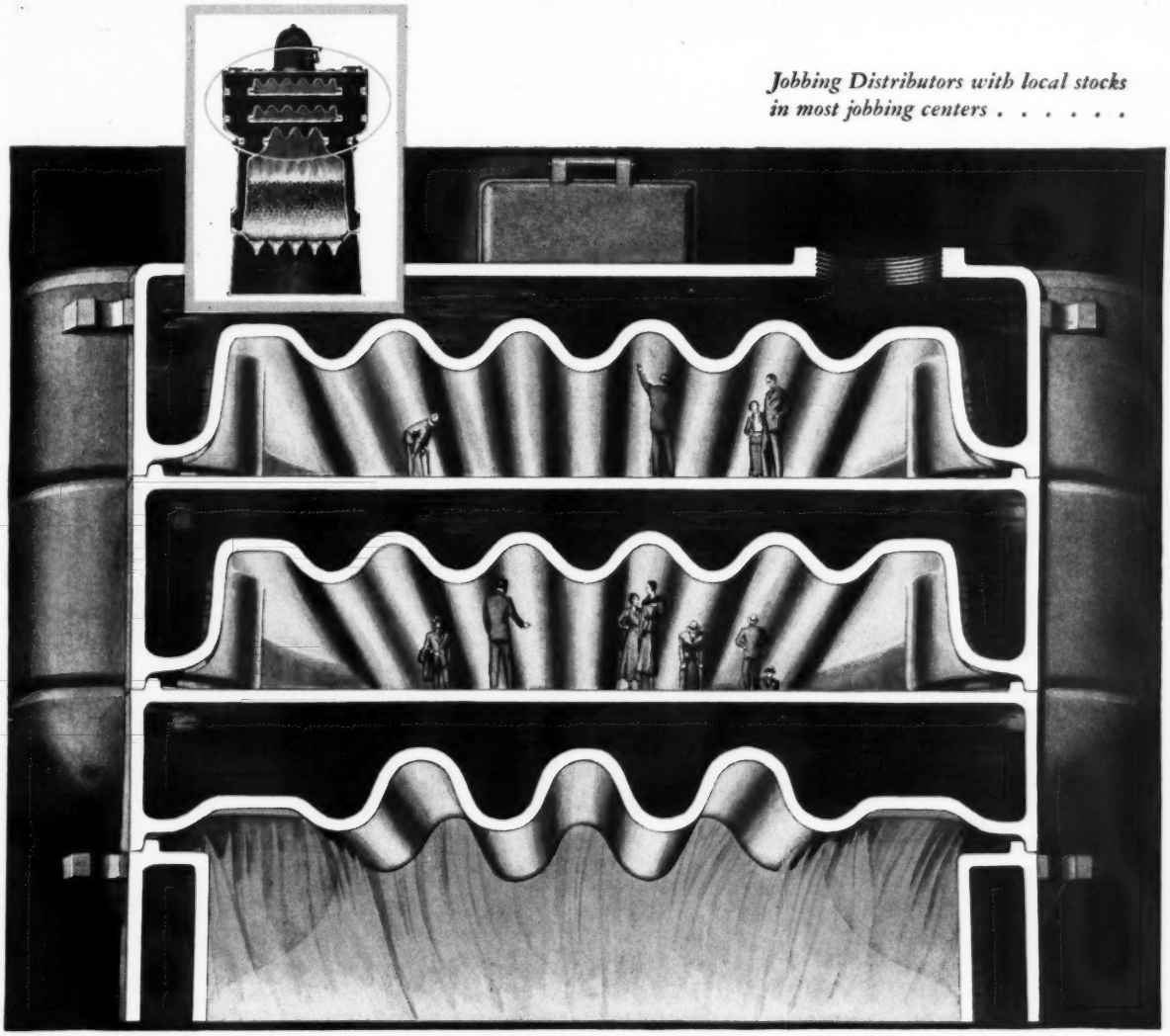
The four way by-pass arrangement prevents clogging and affords a simple method of cleaning the valve should it become necessary to do so.

Simplex Flush Valves are made carefully and inspected rigidly before leaving our plant. They will give a lifetime of service on the hardest jobs,

Ask your jobber to supply you or write to us direct for further detailed information.

LOOK FOR OUR CATALOG IN PLUMBING & HEATING CATALOG

The
BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.



Jobbing Distributors with local stocks in most jobbing centers . . . . . .

It's *easier* to sell the boilers *with the* Fuel-Saving *Corrugations*

Sharpen your sales talk with impressive features like these fuel-saving corrugations. They clinch sales and bring more profits for you.

Weil-McLain Round Boilers save fuel and give more heat because the areas of all vital heat-absorbing surfaces have been greatly increased by corrugations like this ∿∿∿, crowding 30% to 40% more vital heating surface into the same space.

There are similar principles of scientific design in the complete line of Weil-McLain Boilers, including Round, Jacketed, Square, Self-Feed and Smokeless Boilers. Also Weil-McLain "Cameo" Radiators.

WEIL-McLAIN COMPANY
General Offices: Chicago
Boiler Plant and Offices: Michigan City, Ind.
Radiator Plant and Offices: Erie, Pa.

Weil-McLain
SCIENTIFIC COMBUSTION BOILERS

© 1931, W-McL.

FIGHT FUEL WASTE AND DELIVER MORE HEAT

SHARPEN THE EDGE ON YOUR SALES TALK

In your next bid stress the strong selling features of Weil-McLain Boilers. They will help you win.

Mueller STREAMLINE Hard Copper Pipe and Fittings Have Many Advantages for A Heating Installation

RADIATES LESS HEAT

A Mueller STREAMLINE Copper Pipe and Fitting installation radiates very little heat. In fact, nine times less than other materials commonly used for the purpose and in hot water lines, steam lines, etc., can very often be advantageously used without insulation.

CORRESPONDINGLY SMALLER PIPE SIZES CAN BE USED

The waterway through STREAMLINE pipe and fittings is uniform and smoothly recessed, resulting in an uninterrupted flow. This quality, together with freedom from clogging rust and smooth interior of the pipe, cuts flow resistance to a minimum. These features make it practical to reduce the pipe sizes on the plans at least one size throughout.

REQUIRES LESS SPACE

A Mueller STREAMLINE installation is not connected by either threading or flaring, consequently no room is required for wrench grip. It may be placed close up to walls, partitions and ceilings.

COSTS LESS

Mueller STREAMLINE Hard Copper Pipe and Fittings costs you less than any other non-ferrous material for the purpose. It gives your customer a better job and a permanent one.

HERE IS SOME VALUABLE INFORMATION FOR USE ON YOUR HOT WATER HEATING JOBS

The smooth uninterrupted interior waterway and non-clogging properties of STREAMLINE pipe and fittings permit the use of the following sizes of radiator connections for gravity hot-water heating:

Copper Pipe Sizes	First Story	Second Story
3/8 inch	0- 25 sq. ft.	0-30 sq. ft.
1/2 inch	26- 60 sq. ft.	31-90 sq. ft.
3/4 inch	61-100 sq. ft.	91-125 sq. ft.

The size of mains must be equal to or larger in cross section than the area of all the branches; workmanship must be first class and adjustable radiator valves must be used.

Mueller Brass Co.

PORT HURON, MICHIGAN

Three Generations of Brass Making

Patent 1,770,852
Patent 1,776,502
Other Patents Pending

Patent 1,770,852
Patent 1,776,502
Other Patents Pending

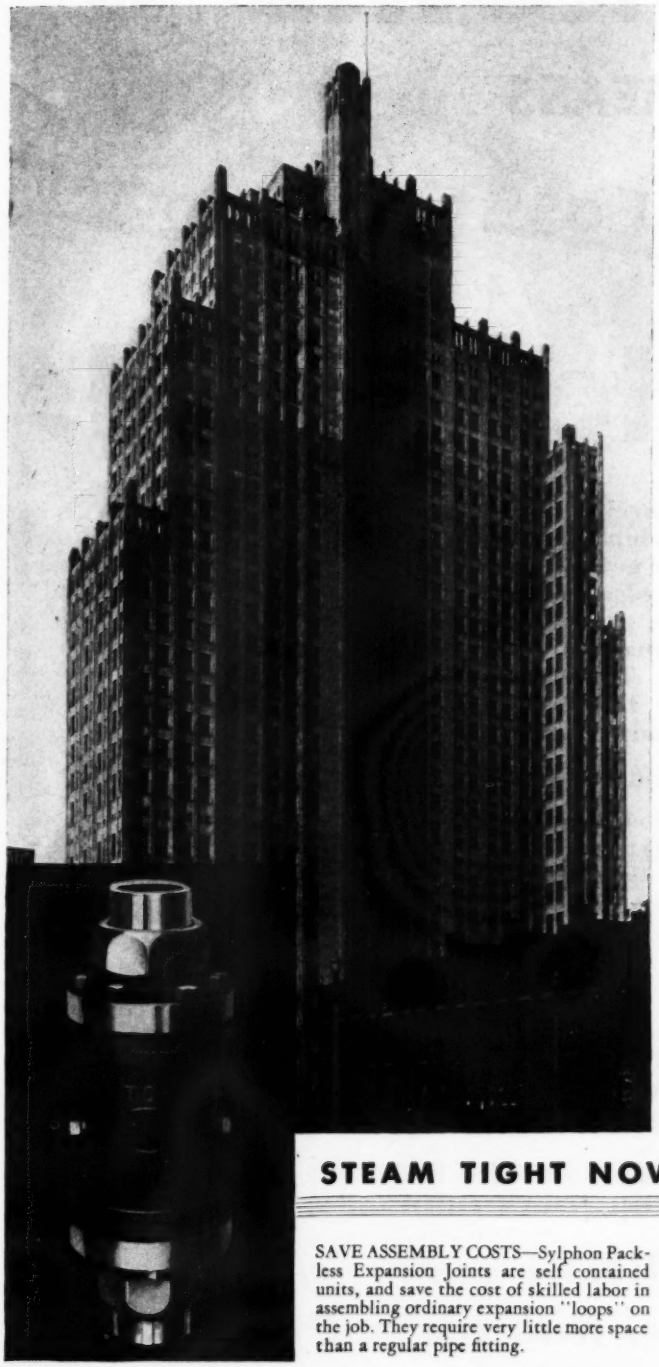
Patent, 1,770,852
Patent, 1,776,502
Other Patents Pending

Patent 1,770,852
Patent 1,776,502
Other Patents Pending

Patent 1,770,852
Patent 1,776,502
Other Patents Pending

COMPARE THE NEW WITH THE OLD

SYLPHON INSTRUMENTS ARE IMPORTANT IN MODERN BUILDING



This handsome Southwestern Bell Telephone Bldg., lifting its 30 stories above the shadowed land marks of St. Louis' early days, presents a graphic picture of architectural and engineering progress.

Sylphon TRADE MARK PACKLESS

Expansion Joints

on its steam and return risers make this structure as modern as tomorrow in scientific heating equipment. They save in construction costs, permit more harmonious design and contribute to heating economies. Sylphon Packless Expansion Joints do away with vertical space wasting "Expansion Loops," and "sliding sleeve" expansion joints almost impossible to repack when a riser is concealed in furring. They require no attention, and yet allow perfect freedom of motion without danger of "jamming." In thousands of installations Sylphon Packless Joints have proved far superior to joints stuffed with commercial packing, always a temporary makeshift and wholly unfit for a vacuum system, or one where a slight vacuum is pulled. Hundreds of architects and engineers who have specified them consider it an extravagance to attempt to do without these Sylphon Expansion Joints. Write today for complete descriptions. Ask for Bulletin ED—300.

Architect—J. R. Tomlin—Mansan, Russell and Crowell.
Engineer—H. H. Morrison.
Heating Contractor—Am. Plumbing & Heating Co., Minneapolis.
Our Representatives—O'Brien Equipment Co., St. Louis.

STEAM TIGHT NOW AND MANY YEARS FROM NOW

SAVE ASSEMBLY COSTS—Sylphon Packless Expansion Joints are self contained units, and save the cost of skilled labor in assembling ordinary expansion "loops" on the job. They require very little more space than a regular pipe fitting.

European Representatives, Crosby Valve and Eng. Co., Ltd., 41-2 Foley St., London, W. 1., Eng.

FULTON SYLPHON CO. KNOXVILLE, TENN., U.S.A.

Canadian Representatives, Darling Brothers, Ltd., 140 Prince St., Montreal, Que., Canada.

REPRESENTATIVES IN ALL THE PRINCIPAL U. S. A. CITIES

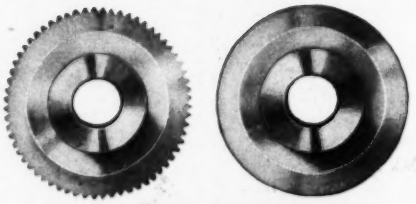
TRICROME

MEANS

New Speed — New Ease — New Economy

in

Pipe Cutter Wheels

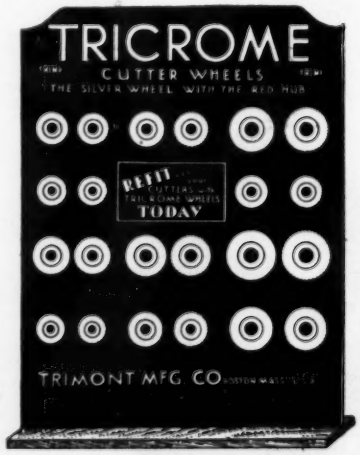


THE sensational new Silvered Wheel with the red hub, is now on sale at your plumbing supply house. TRICROME Wheels are new — from the design of their keener cutting edge to their self-lubricating silver and red finish. They work easier, cut faster and last longer than any cutter wheel ever before developed. TRICROME Wheels now in use have cut over 1000 pieces of pipe and are still sharp and ready for more.

SEE THEM .... TRY THEM

Look for the TRICROME Sample Board showing knurled and plain edge Cutter Wheels to fit TRIMO, Barnes and Saunders type cutters. This display identifies your supply house as a distributor of TRICROME Wheels and permits you to examine the *new*, keener cutting edge which throws practically no burr inside the pipe.

Renew your TRIMO, Barnes and Saunders type cutters *today* with new TRICROME Silvered Wheels and notice the difference—once around the pipe to track—twice more to cut—and the job is done.



THERE IS NOTHING BETTER THAN A "TRICROME" AT ANY PRICE — YET THEY COST NO MORE THAN ORDINARY WHEELS

the new TRICROME *cutter wheel*
the silver wheel with the red hub

A product of Trimont Mfg. Co., Roxbury (Boston), Mass.

Makers of TRIMO TOOLS for more profitable pipe work

MYERS Pumps and Watersystems Solve the Stock Watering Problems.

Everyone knows that stock responds profitably to a plentiful supply of water easily and continuously available.

Everyone knows that a modern water system on the farm quickly pays for itself in time and labor saved. Besides the extra profits, it consistently earns through more productive cattle, hogs, chickens and other stock about the place.

There is no longer any question about the economy and need of running water at the turn of a faucet for suburban and country homes, farms, estates and similar places.

Myers Self-Oiling Water Systems, engine or motor powered, provide the means to running water for household, for barns and feed lots, for fire protection, for sprinkling and for innumerable other uses. There is a style and size in a wide capacity range, two hundred and fifty to ten thousand gallons per hour.

Spring is just around the corner. As a merchandiser you are overlooking a splendid opportunity to increase your sales and profits during this period and the months to follow if you fail to take advantage of the many possibilities Myers Water Systems now offer.

Familiarize yourself with the facts. Don't delay a single day. Write us for catalog and complete information about Myers Water Systems, our national advertising campaign now in full swing, and the ever increasing number of opportunities they present for profitable sales.

Your inquiry will receive prompt attention

THE F. E. MYERS & BRO. CO.
Ashland, Ohio

Pumps—Water Systems—Hay Tools—Door Hangers

Here is what MAYFLOWER *beauty means*

THE distinctive beauty of the MAYFLOWER cabinet arms the MAYFLOWER dealer with a sales appeal not associated with other electric refrigerators. All makes may, perhaps, point to mechanical excellence. Each may have one or several points of difference on which a salesman may dwell. Only MAYFLOWER embodies authoritative beauty . . . Note the Colonial influence in the contour of the cabinet—in leg design, in hardware pattern. The old-fashioned ice box effect has been entirely superceded. Those are characteristics that MAYFLOWER dealers are using to advantage this year, for few factors in making a sale influence a housewife like period design beauty . . . Complete line — Comparative prices — Attractive discounts.

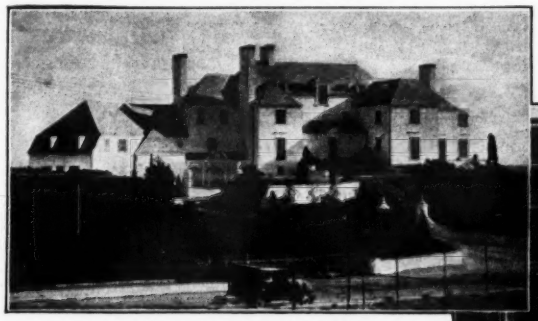
Trupar
MANUFACTURING CO.
DAYTON, OHIO U. S. A.

"85 RED-BRASS PIPE

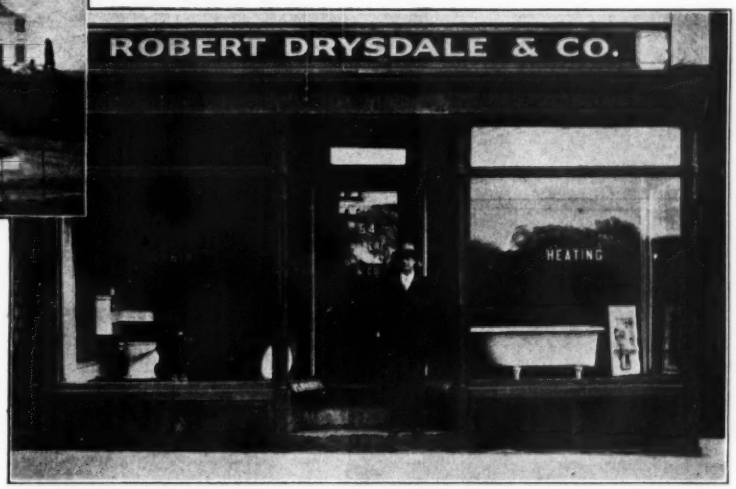
most suitable for *highly corrosive water* . . .

in Rhode Island coast towns"

writes ROBERT DRYSDALE JR.



The Snowden residence at Watch Hill, R. I. Robert R. McGoodwin, architect; J. S. Cornell & Son, Philadelphia, general contractor; Robert Drysdale Co., Westerly, R. I., plumbing contractor; Phillips Lead & Supply Co., Providence, distributor.



Robert Drysdale, Jr., in doorway of shop of Robert Drysdale & Co., at Westerly, R. I. Knowledge of local water conditions is an asset to this company.

Leading plumbing supply houses everywhere stock . . .

Anaconda 67 Brass Pipe for normally corrosive waters.

Anaconda 85 Red-Brass Pipe for highly corrosive waters, and for rigid underground service lines with threaded fittings.

Anaconda Deoxidized Copper Tubes for use with compression fittings for underground service lines.

Our Technical Department will be glad to cooperate with you in determining the nature of your local water supply and recommending the Anaconda Brass Pipe to use.

ALONG with its magnificent facilities for water sports, Rhode Island provides its residents with water which, while healthful, is highly corrosive to pipe. The Robert Drysdale Company, at Westerly, has had many opportunities to deal with these conditions. Perhaps their experience may be helpful:

"Experience has convinced us that Anaconda 85 Red-Brass Pipe is the most suitable for use under the highly corrosive water conditions in our Rhode Island coast communities. We recommend it for hot and cold water lines in all types of construction, for it assures our customers dependable service and saves them upkeep expense. Its ready workability and easy threading properties enable us to make each installation a first-class, durable job."

Robert Drysdale Jr.

ANACONDA
from mine to consumer

ANACONDA BRASS PIPE

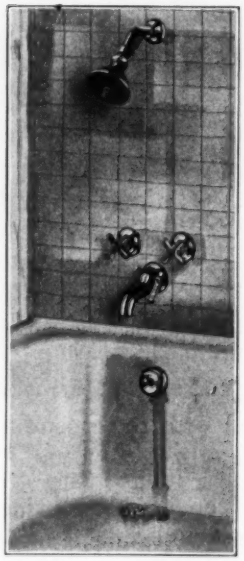
One product of The American Brass Company, *General Offices:* Waterbury, Connecticut

"Chicago Faucets give us good representation wherever we install them"

The "Manhattan" Bath Fixture for better jobs at better profits

Architects and owners will quickly appreciate the six outstanding selling points on the "Manhattan":

1. Shower face plate removed by loosening only a center screw.
2. Only two valves—each with standardized, removable unit.
3. One-piece fitting for tub and shower connection.
4. Automatic diverter on spout—prevents scalding or unexpected showers. No rubber—No spring.
5. Mechanical waste with everything accessible from face of tub.
6. Also furnished with integral, automatic stops which shut off water when Quaturn Valve is removed for re-washering.



"The goods you sell are an indication of the character of your business. You must depend on what you send out to represent you. It is impossible to meet all your customers personally, and those you don't meet can judge you only by your men and merchandise. We believe in quality goods—that's why we sell Chicago Faucets. It is a real pleasure to say that they give us good representation wherever we install them."

(Signed) James H. Mullen
Chicago Master Plumber

Meet us in MILWAUKEE. We will exhibit at N. A. M. P. Convention, June 22-25.

The Chicago Faucet Co.
2700-22 N. Crawford Ave., Chicago.

Help me to get better public recognition by sending your new 76-page catalog.

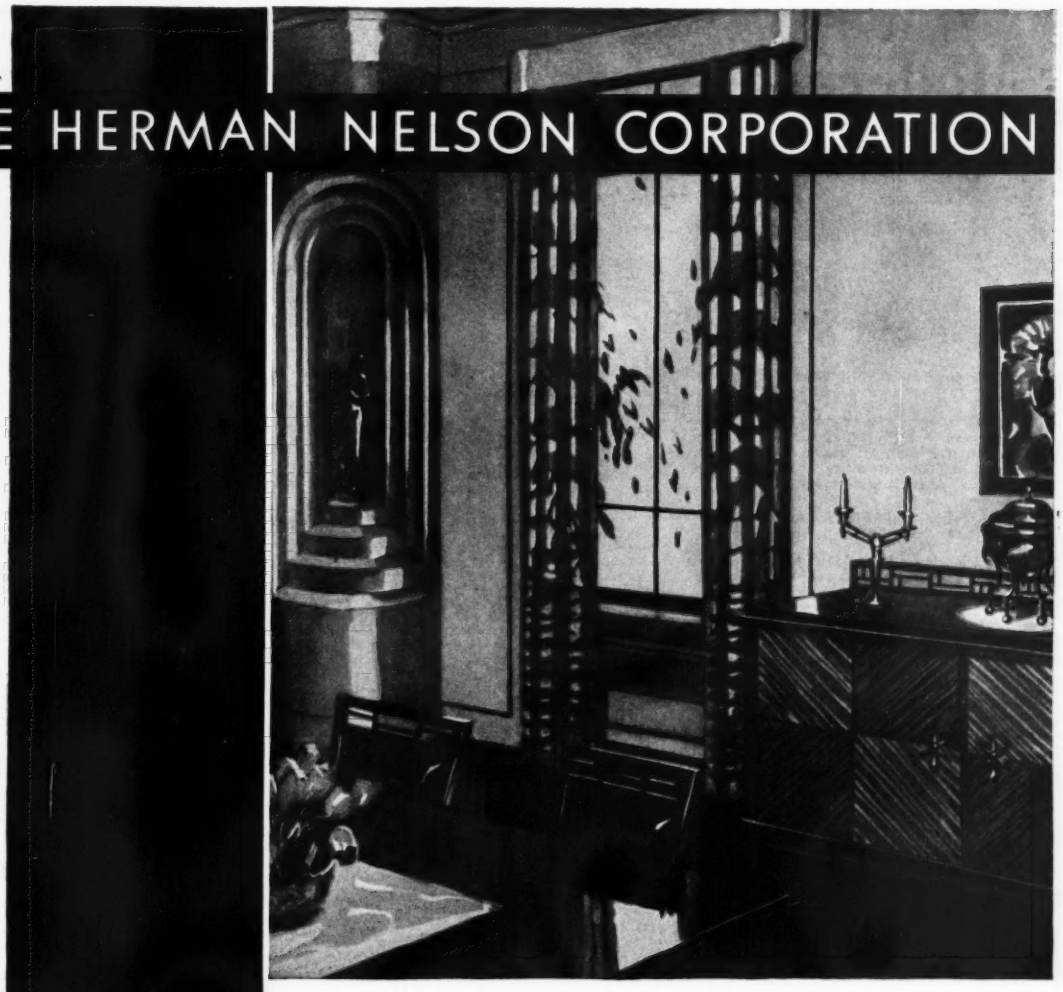
Name.....

Address.....

CHICAGO FAUCETS

© 1931
T. H. N. Corp.

THE HERMAN NELSON CORPORATION



HERMAN NELSON *Invisible* RADIATOR

Heating engineers and contractors are turning to the Herman Nelson Invisible Radiator for two very definite reasons.

First, this heating unit fits within the wall—meets the growing preference for radiators that occupy no floor or room space.

Second, it is a sturdy heating unit incorporating engineering principles proved correct by many years of successful heating experience.

The Herman Nelson Invisible Radiator comes completely equipped with a sturdy steel case, graduating damper and choice of six outlet grilles of authentic design. For larger and taller buildings, where access to control valves is required, a special removable panel is provided.

If you are working on a heating system for a residence or any type of building that will have a steam, hot water, vapor or vacuum heating system, you will insure your client's satisfaction by installing Herman Nelson Invisible Radiators. Do you have our catalogue? A request will bring it to you.

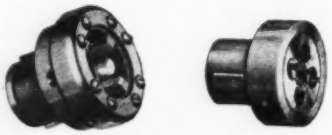
The Herman Nelson Corporation are makers of the *Univent System of Ventilation*, the *Her-Nel-Co System of Ventilation*, the *Herman Nelson Invisible Radiator*, the *Herman Nelson hiJet Heater*, and other heating and ventilating equipment.

A HERMAN NELSON PRODUCT

Factory at Moline, Illinois • *Sales and Service Offices in All Principal Cities*

BELFAST, ME.	SCRANTON	GRAND RAPIDS	DES MOINES	MIAMI	SAN FRANCISCO
BOSTON	KINGSTON, PA.	SAGINAW, MICH.	MILWAUKEE	DALLAS	LOS ANGELES
SPRINGFIELD, MASS	HARRISBURG	DETROIT	APPLETON, WIS.	OMAHA	VANCOUVER, B. C.
PROVIDENCE, R. I.	PITTSBURGH	CLEVELAND	MINNEAPOLIS	EMPORIA, KAN.	TORONTO, ONT.
HARTFORD, CONN.	JOHNSTOWN, PA.	COLUMBUS	DULUTH	KANSAS CITY	WINNIPEG, MAN.
NEW YORK CITY	ALLENTOWN, PA.	CINCINNATI	ST. LOUIS	DENVER	CALGARY, ALTA.
SYRACUSE	ERIE, PA.	TOLEDO	BIRMINGHAM	SALT LAKE CITY	LONDON
ALBANY	WHEELING, W. VA.	INDIANAPOLIS	NASHVILLE	BUTTE, MONT.	OSLO
ROCHESTER	WASHINGTON, D. C.	EVANSVILLE, IND.	CHATTANOOGA	SPOKANE	MELBOURNE
BUFFALO	BALTIMORE, MD.	CHICAGO	MEMPHIS	PORTLAND, ORE.	TOKIO, OSAKA
PHILADELPHIA	CHARLOTTE, N. C.	PEORIA, ILL.	NEW ORLEANS	SEATTLE	BUENOS AIRES

Modernize Your Shop With These New and Improved Beavers!

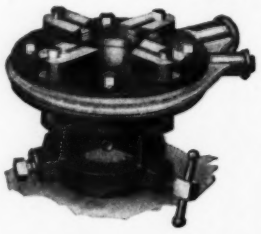


The Improved No. 3 Beaver Ratchet
⅛" to 1" Inclusive

An outstanding favorite the world over—has been improved by including four oil holes, between the dies, for easy oiling and chip clearance. Oil flows directly to the throat of the dies—where it is needed.

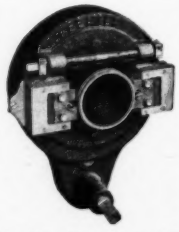
Bolt Die Heads
For No. 3 Beaver Ratchet

Bolt Die Heads from ¼ to 1 inch are now available for the No. 3 Beaver Ratchet Stock.



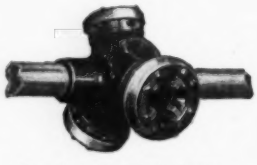
The New Beaver "4-Post" Die Stock
No. 8, Plain—No. 8-R, Ratchet
1" to 2"—Semi-Self-Contained

Have patented self-contained rear end. Grip screw easy to tighten by hand. Grooved bolts and washers quickly and accurately center the pipe. Straight line pull—means easy cutting, better threads, and less wear on dies and tool. Extra heavy upright posts mean greater strength and durability. Simple, sturdy ratchet pawl. Open die slots for easy cleaning. Safe enclosed die-retaining device. Light in weight, yet rugged in construction.



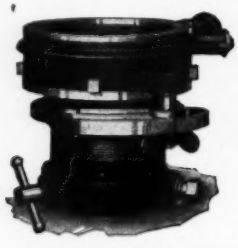
The New No. 104 Beaver
Square-End Cutter
Fully Automatic and Self-Contained
2½" to 4"

The utmost in simplicity of design and construction. Will cut standard, extra heavy or double extra heavy pipe. Extremely rugged and durable. Gears fully enclosed and packed in grease. Nickel steel housing. A practically unbreakable tool. For use by hand or with Power Drives. The pinion is in front and remains stationary.



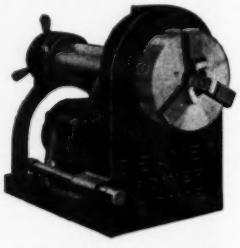
The New "3-Way" Beavers
No. 33—⅜", ½" and ¾"
No. 34—½", ¾" and 1"

Companion tools to the popular No. 3 Beaver Ratchet. Dies and die caps interchangeable with No. 3 Beaver. Oil holes provided for easy oiling and chip clearance. A well balanced tool. Electrically heat treated die segments are square—no offset—no "tip" to break off. Simple, sturdy tools.



Nos. 11 and 11-A Beavers
Fully Self-Contained and Adjustable
1" to 2"

Light-weight low-priced self-contained tools—adjustable for over, under or exact standard. Tight joints can be made regardless of variations in fittings. Drip threads and close nipples readily cut. Simple, well made tools. Companion tools to popular Nos. 25 and 26.



New No. 46 Beaver Power Drive
With Universal (Reversible) Motor

Cuts and threads up to and including 12-inch. Same in design, construction, weight, and price as the popular Nos. 44 and 45 Beaver Power Drives. Universal Motor operates on any 110 Volt A. C. or D. C. line of any cycle. Simple and foolproof—no frail parts or adjustments—can be operated safely and efficiently by your most inexperienced helper. Easily portable. Makes power tools of hand tools.

The New No. 17 Beaver Ratchet Die Stock
½" to 2" Inclusive

An excellent tool for use with Power Drives—and ideally adapted for use where simple and rugged tools are desired for bench or ditch work. Large oil holes in the die head permit easy oiling and ample chip clearance. Extra long handle gives necessary leverage for easy cutting. Sold in individual units.

Improved No. 41-E Beaver
2½" to 4"
Semi-Self-Contained and Adjustable

Vastly improved by fully enclosing and packing the gears in graphite grease in a practically unbreakable nickel-steel housing. Impossible for dirt, sand, mud, chips to get into the gear and pinion and damage the tool—an improvement which will eliminate many costly repair bills and which provides the necessary rigidity to insure smooth, free operation, better threads, and longer life to moving parts.

No. 102 Beaver Thin-Wheel Pipe Cutter

Cuts from ⅛ to 2-inch, inclusive. Castings are of certified malleable iron. Extra long threaded barrel provides more threads for greater durability. Large Cross handle permits comfortable grip. Thin Cutter Wheel made of special grade alloy steel, electrically heat-treated for durability. Makes practically a burrless cut.

Write for Complete New Catalog — Sold by All Leading Supply Houses

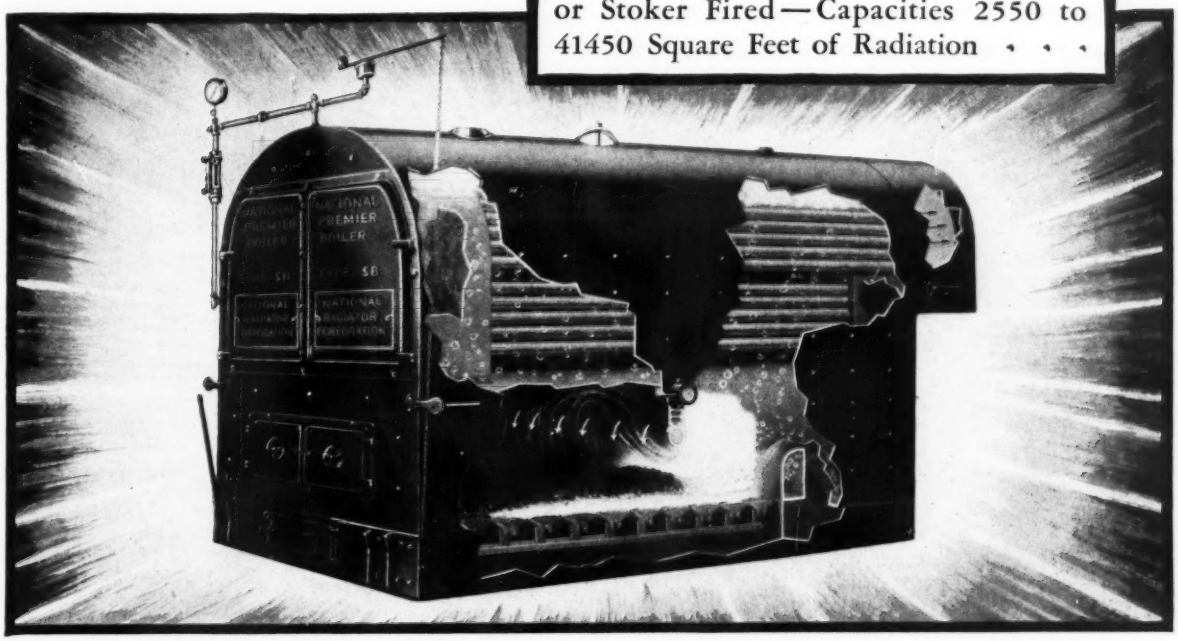
Manufactured by

THE BORDEN COMPANY, 510 Dana Ave., Warren, Ohio

NATIONAL PREMIER

STEEL BOILERS

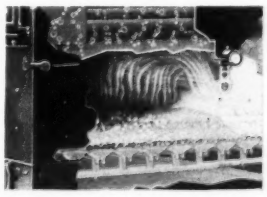
Electrically Welded—Coal, Oil, Gas or Stoker Fired—Capacities 2550 to 41450 Square Feet of Radiation . . .

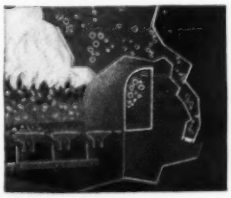


3 SUPERIOR FEATURES

The Recessed Front Smoke Chamber converts the objectionable projecting sheet metal box, which wastes heat, into an integral part of the boiler which acts as a heat generating chamber. The heavy cast iron doors are insulated to prevent heat loss into the boiler room.

The All-Metal Heat Resisting Arch replaces the short-lived and therefore expensive brick arch which does not introduce secondary preheated air essential to smokeless combustion. The All-Metal Arch furnishes preheated secondary air in small jets across the entire fire-box.





The Detachable Water-Cooled Steel Bridge Wall eliminates the use of fire brick, which must be replaced frequently. It acts as a heat generating chamber and increases the water circulation within the boiler.

The National Premier Steel Boiler is unique, both in design and in construction in that, what might be termed necessary evils in present type steel boilers, are converted into valuable heat generating features—the need of which has long been recognized, but never before filled.

The National Premier Electrically Welded Steel Boiler is offered with the conviction that it will please the Man-Who-Pays-the-Bills and the Man-Who-Shovels-the-Coal, meeting their joint and exacting demands for increased efficiency and economy of performance.

NATIONAL RADIATOR CORPORATION
JOHNSTOWN, PENNA.

SMITH & WESSON

modern

SERVICE —

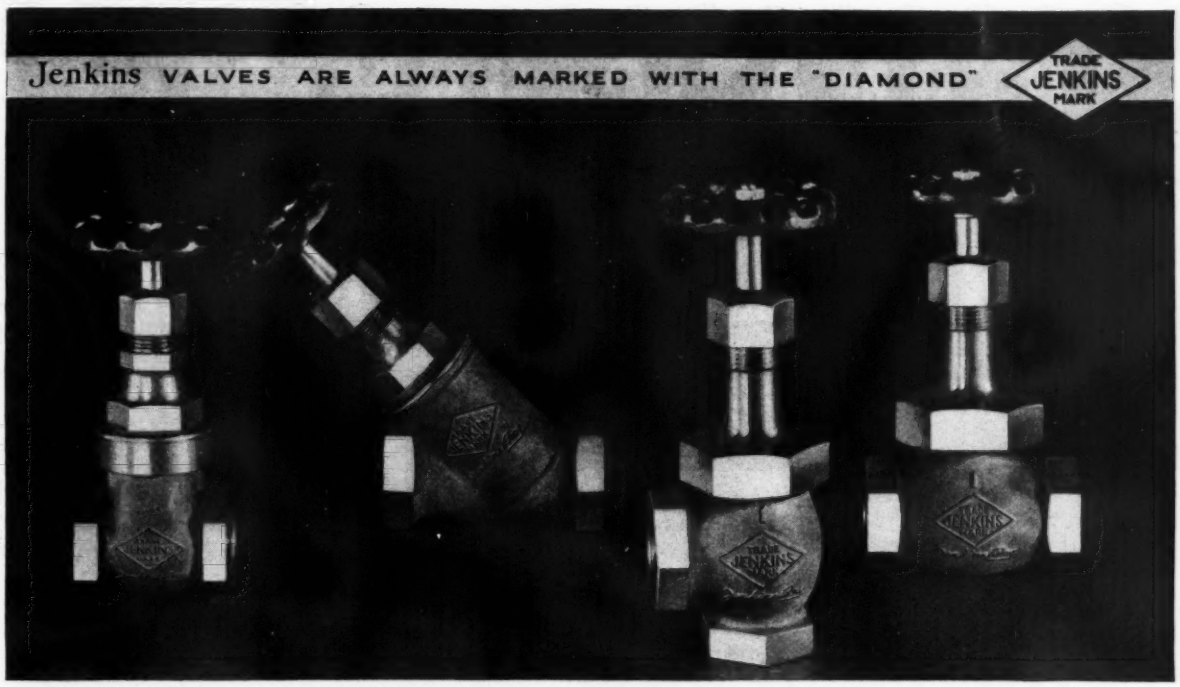
The modern idea of service differs vastly from that of yesteryear. Service is demanded from the product, not from the seller.

So it is with Smith & Wesson Flush Valves. Once on the line the efficiency of their operation is assured.

With no breakdowns no servicing is needed . . . . that is why they are popular with contractor and customer alike.

SMITH & WESSON
FLUSH VALVE DIVISION
SPRINGFIELD MASS.

FLUSH VALVES



A group of Jenkins Bronze Valves—from left to right: Fig. 370, Jenkins Standard Bronze Gate Valve; Fig. 124, Jenkins Standard Bronze Y or Blow-Off Valve; Fig. 108-A, Jenkins Standard Bronze Angle Valve; and Fig. 106-A, Jenkins Standard Bronze Globe Valve. The angle and globe valves shown have the new Jenkins advantages of the one-piece screw-over bonnet and slip-on stay-on disc holder.

Stamina to stand up wherever installed

JENKINS Valves are a wise choice from the standpoint of the contractor as well as his customer.

Jenkins Valves have the stamina to stand up wherever installed. In plumbing and heating, as in the power plant and fire protection piping, Jenkins assure unfailing performance, unaffected by the strains of expansion, contraction, lifting and settling.

Such valve performance satisfies the customer, and saves the contractor from needless and unprofitable servicing. Jenkins Valves are obtainable for practically any purpose through supply houses.

JENKINS BROS.

80 White Street, New York, N. Y. — 133 No. Seventh St., Philadelphia, Pa. — 524 Atlantic Ave., Boston, Mass. — 646 Washington Blvd., Chicago, Ill. — 1121 No. San Jacinto, Houston, Texas

JENKINS BROS., Limited, Montreal, Canada; London, England
Factories: Bridgeport, Conn., Elizabeth N. J.; Montreal, Canada

Jenkins

BRONZE IRON STEEL

VALVES

Since 1864

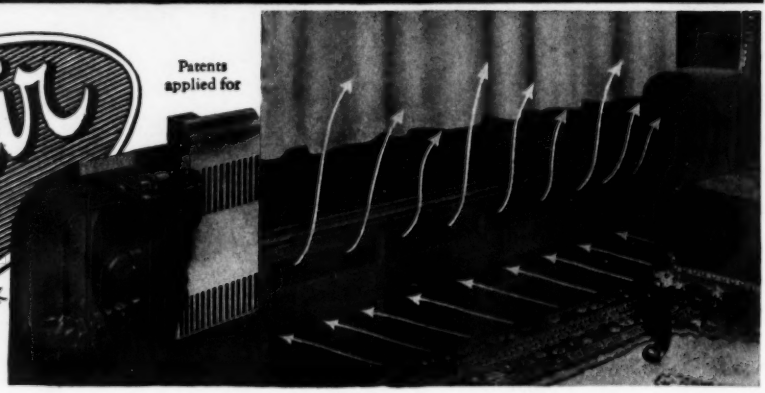
AUTOMATIC HUMIDITY + CONCEALED RADIATION

Combined for the First Time!

Bon-air

TRADE MARK

Patents applied for



FOR the first time, automatic humidification and invisible radiation have been successfully combined for domestic use. The name is *Bon-Air.*

Bon-Air has undergone extensive and exhaustive tests at a leading institute of technology and has been approved as a highly efficient system. It is now in use in many fine homes throughout New England where it has proved its value during variable and extreme weather conditions.

Bon-Air will be welcomed by heating contractor, architect and customer alike. For the heating contractor it provides a system easy to install and troubleproof in maintenance. To the architect (and the decorator too), it means greater freedom in planning since conventional radiators and separate humidifying devices are completely eliminated. To the homeowner, it brings health and permanent relief from hot, desert-dry air that is the direct cause of so many colds and respiratory diseases. In addition it prevents furniture from warping and saves fuel.

Bon-Air can be installed in old homes as easily as in new. It can be placed in one room or throughout the home. And its cost is so reasonable that most homeowners in your community immediately become prospects.

If you are interested in this new and exclusive system of radiation, let us tell you more about Bon-Air.

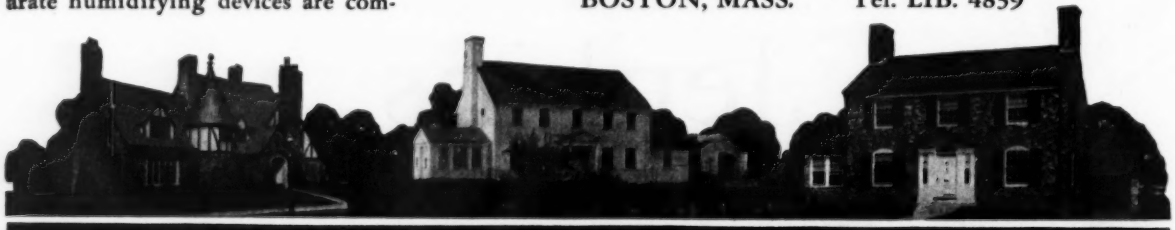
8 points of BON-AIR superiority

1. BON-AIR for the first time combines concealed radiation with automatic humidification.
2. BON-AIR permits the free arrangement of furniture.
3. BON-AIR can be adapted to old homes without expensive alterations.
4. BON-AIR heats all corners of the room evenly.
5. BON-AIR saves valuable floor space now wasted.
6. BON-AIR preserves woodwork, furniture, rugs and decorations.
7. BON-AIR does not discolor walls.
8. BON-AIR asbestos insulation prevents all external heat loss.

BON-AIR RADIATOR CORP.

Chamber of Commerce Building

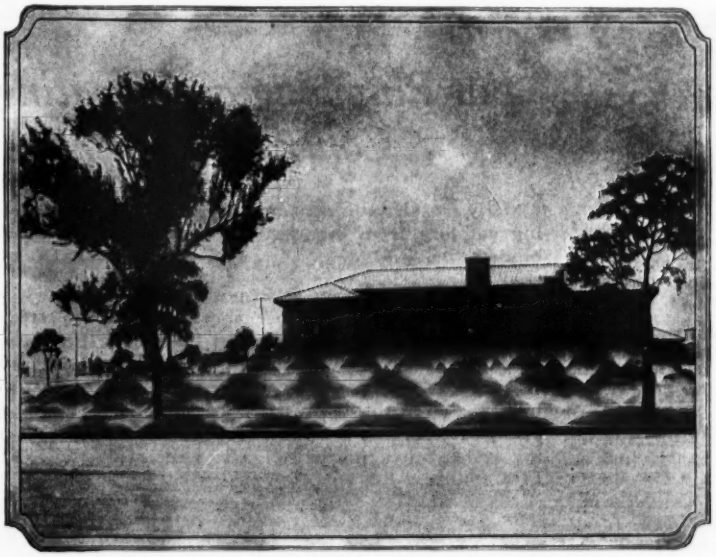
BOSTON, MASS. Tel. LIB. 4839



· TYPICAL HOMES ENJOYING BON-AIR RADIATION ·

New Business!

Here is a chance to get new business without extra cost or more men. It offers a big outlet for pipe, fittings, valves, and labor. It's easy business to get and there is a good profit in every job.

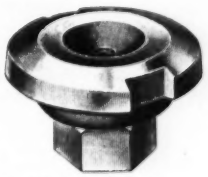


Hundreds of home owners want to know how to keep their lawns fresh and verdant without trouble or fuss. Tell them about Nelson Silver Spray underground pipe sprinkling systems.

This system waters the entire lawn with a turn of the wrist. Pipes are laid a few inches under the sod and equipped with Silver Spray heads. Installation is easy and simple. Clip the coupon for FACTS.

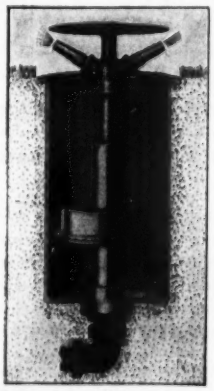
SILVER SPRAY
Underground
SPRINKLER HEADS

A twist of the wrist and the lawn is sprinkled —just as the illustration shows. And we'll help you sell. Ask about our Plumbing Contractors' Sales Plan. Silver Spray systems offer you a chance to make some easy money.



The full circle Silver Spray head has an easily accessible screw, assuring uniform sprays over the entire system.

The half circle and quarter circle Silver Spray heads, also adjustable, are for use along side-walks and in corners where full spray is undesirable.

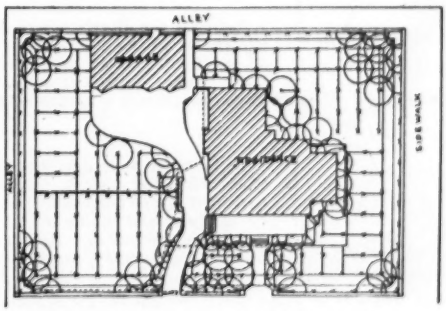


For spaces 80 to 100 feet in diameter, the ROBIN POP-UP head is economical to use in connection with Silver Spray heads. Wide coverage reduces installation costs.

FREE BLUE PRINTS
TO PLUMBING CONTRACTORS

To further help you, we will give you plans free of charge up to May 1st. Specifications for amount and sizes of pipes, fittings, and valves necessary are part of the FREE blueprint service.

Silver Spray heads do not interfere with rake or mower. These underground, hoseless systems are rapidly becoming popular all over the country. Somebody is going to make lots of easy money. If you want your share, get complete facts.



L. R. Nelson Mfg. Co., Inc.
Peoria, Illinois

L. R. NELSON MFG. CO., INC.,
1780 S. Washington St., Peoria, Ill.
Gentlemen: Send full facts about the big-profit Silver Spray systems and your Sales Plan.

NAME_____

STREET_____ CITY_____ STATE_____

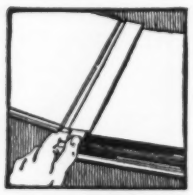
THE HANDY SPEEDLOK
Domestic Engineering Catalog Binder

Especially designed for the standardized catalog page adopted by the plumbing and heating industries

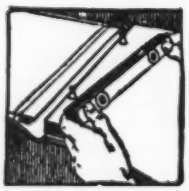
The SPEEDLOK is a quick operating catalog binder designed to fit reprints of catalog pages in "Domestic Engineering Plumbing and Heating Catalog" as well as all other catalog pages that conform to the standards adopted by the plumbing and heating industries.

Easy and speedy operation are special features of this binder. A slight pull on the concealed bar under the top cover unlocks mechanism when sheets are inserted. Equipped with bar for removing sheets when changes are made.

Minimum capacity 1¼ inches. By simply unscrewing extension posts capacity can be extended to 2¼ inches. Works perfectly for all requirements—either a few sheets or filled to capacity.

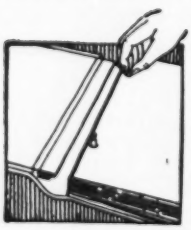


Covers are bound in heavy black Levant Grained Fabricoid, semi-flexible, very durable and attractive looking.



To unlock Binder—Pull out slide bar in top wing. Top cover will immediately fall back.

To lock Binder—bring top wing back over the posts—be sure posts fit in the holes in the top wing — then push in slide bar.



Separate the sheets where desired and slip sheets off the posts. Take out sheets or put in new ones as desired. These three moves take but a few seconds. Each operation is a natural one.

To increase or to decrease the capacity of the binder is a simple operation. The two posts are so constructed that they can be easily raised or lowered to meet the height requirements. Binder posts can be extended from 1¼ inches to 2¼ inches.

Plain White 16 lb. Bond Sheets Punched to Fit Speedlok Binder

Quantity	100	500	1000
Price	$1.00	$3.00	$5.50

Prices for larger quantities quoted on application.

For Plumbing and Heating Contractors—

Many master plumbers and steamfitters assemble working catalogs from standardized catalog sheets filed in binders.

Domestic Engineering is in position to furnish without charge, upon request, loose sheets—which are reprints from catalog pages appearing in "Domestic Engineering Plumbing and Heating Catalog"—of several hundred manufacturers. They are standard catalog page size—10⅝ x 8½ inches — are printed on a good grade of light paper and punched according to the standard adopted by the plumbing and heating industries. These sheets fit the SPEEDLOK binder.

For Jobbers' Salesmen—

The loose-leaf system reduces to the minimum the bulk and weight of catalog material required by the salesman. Only matter actually required for selling purposes need be carried in the binder. It does away with the necessity of carrying entire catalogs, booklets and circulars of various sizes and shapes.

Salesmen using the loose-leaf system have a great advantage over men not using this equipment — to say nothing of the added convenience, time and labor-saving features.

With a modernly equipped loose-leaf binder, the salesman can present his products in a more comprehensive manner than it is possible to accomplish by the old methods. Having all his material up to date in compact form and easily available, he can show latest specifications, answer questions or quote prices more readily.

When orders for binders are accompanied by requests for catalog reprints the binders will be equipped with the sheets desired and shipped complete.

Write for full details regarding loose sheets and binders.

Price of binder—$3.00. Prices on quantities on application.

DOMESTIC ENGINEERING

1900 Prairie Avenue *(Catalog Department)* **Chicago, Illinois**

Increase your profits with IRON FIREMAN

Sales Franchise for Iron Fireman Automatic Coal Burner still available in a few excellent territories

WRITE FOR INFORMATION

The IRON FIREMAN sales franchise offers a money-making opportunity for the plumbing and heating organization. Sales are not dependent on new construction. Owners of thousands of boilers, now firing coal by hand, or burning costly oil or gas, are good live prospects, regardless of temporary business conditions. The installation of Iron Fireman cuts operating costs, which is of utmost importance in every type of business and institution, as well as in private homes. In four ways Iron Fireman literally pays for itself—(1) cuts fuel costs, (2) provides steady heat and power, (3) reduces labor costs, (4) eliminates the smoke nuisance.

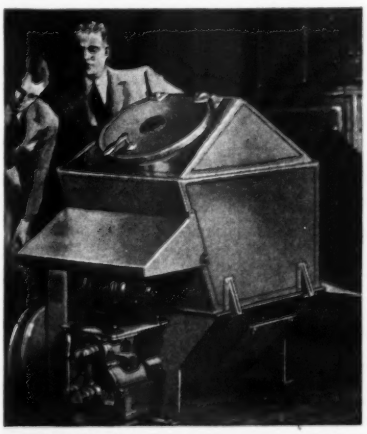
Why Iron Fireman dealers make money

Iron Fireman gives its dealers thorough support. The Iron Fireman Manufacturing Company is the pioneer and the largest manufacturer in its field. Iron Fireman excels in construction, operation, and performance. Iron Fireman is the best known automatic coal burner in the world. Its advertising dominates the industry. Effective direct mail advertising, sales literature, and a complete line of sales helps enable dealers to sell effectively.

Iron Fireman maintains a complete installation and service school for its dealers. In addition to this mechanical school at the Cleveland plant, the Iron Fireman staff of District Representatives and Field Engineers counsel and assist dealers in sales, merchandising, and in mechanical matters.

Write or wire for information

If you are established in the heating and plumbing business, and if Iron Fireman is not already represented in your community, you can make money by selling and installing Iron Fireman along with your other lines. Write or wire the executive office and we will be glad to go into the subject with you fully. Iron Fireman Manufacturing Company, Portland, Oregon.



"A money-making franchise" say dealers

READ

"With an experience of 47 years in the heating and plumbing business, we can truthfully say that Iron Fireman has been one of the most interesting and profitable side-lines we have ever handled." A Washington dealer.

•

"1930 was one of the best years we ever experienced in our twenty years' existence. We say this only because of the Iron Fireman. Eighty per cent of our business is now stoker business." A Pennsylvania dealer.

•

"I handle other accounts in the heating and ventilating field, but the Iron Fireman franchise is one that I am most proud to possess." A Washington dealer.

•

"We have been in the heating contracting business for 16 years, and find the Iron Fireman the cleanest line we have ever handled, for the entire personnel of the factory is always behind the dealer." An Idaho dealer.

•

"We believe the Iron Fireman franchise will show a greater profit than any other steam or boiler specialty in this line, for the same amount of money invested." An Ohio dealer.

IRON FIREMAN

AUTOMATIC COAL BURNER

IRON FIREMAN MANUFACTURING COMPANY
982 E. 17th Street, Portland, Oregon

Please give me further information regarding the Iron Fireman franchise.

Name .....

Address .....

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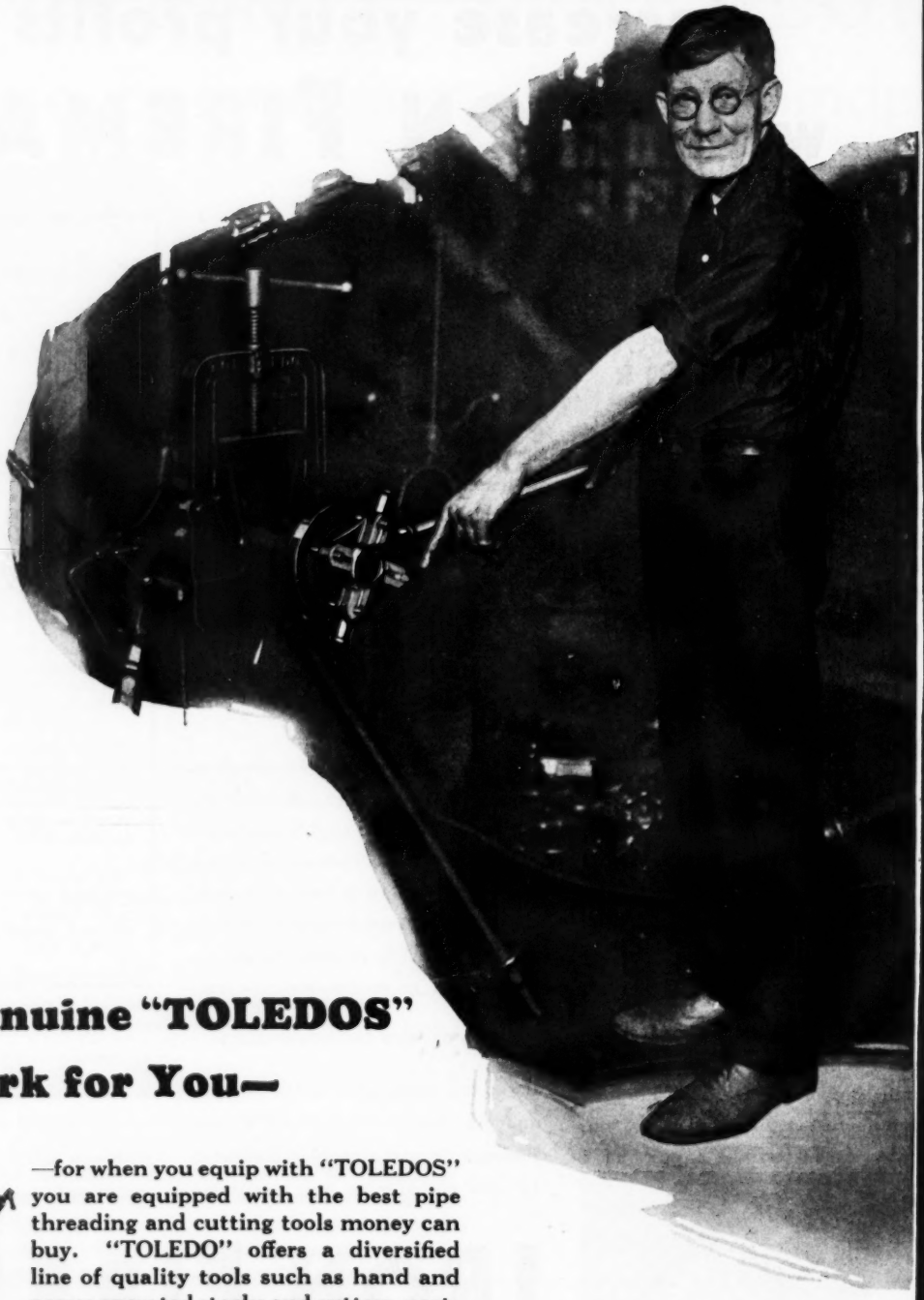
THE MACHINE THAT MADE COAL AN AUTOMATIC FUEL



Put Genuine "TOLEDOS" To Work for You—

TOLEDO VISE-MOUNTS FOLD UP LIKE AN UMBRELLA

—for when you equip with "TOLEDOS" you are equipped with the best pipe threading and cutting tools money can buy. "TOLEDO" offers a diversified line of quality tools such as hand and power operated stocks and cutters, portable power pipe machines, power drives, vises and vise mounts, work benches and the "TOLEDO" ratchet reamer. Use only genuine "TOLEDOS" and be sure of quality pipe tools. The Toledo Pipe Threading Machine Co., Toledo, Ohio or New York Office, 72 Lafayette Street.

"TOLEDO"

DEPENDABLE PIPE TOOLS

DOMESTIC
ENGINEERING
MARCH 7, 1931

Our Industry

Many of the readers of this column will attend some convention in the next few weeks. Some of them will speak at these meetings.

♦ ♦

These talks will run all the way from good to bad. Some speakers will even bring into ridicule the individual or company they represent.

♦ ♦

How many manufacturers or wholesalers who send representatives to contractor conventions ever take the time to check up the impression made by those representatives?

♦ ♦

Do manufacturers know that—

♦ ♦

At one meeting which the writer attended, a manufacturer's representative allowed the privilege of demonstrating a new product, started his talk with "Of course, you plumbers are not business men. You allowed the gas fixture business to get away from you but in spite of that, we are going to sell our new specialty through you."

♦ ♦

At another convention, a salesman, in fact I recall he was good enough to be known as a "merchandising counselor," was asked to talk on selling methods. Instead of that, he began immediately to tell of his own company's products and of their advantages. A contractor in the audience intervened on a point of order which led to the salesman's talk being cut short.

♦ ♦

The writer has seen other manufacturers' representatives so unfamiliar with the practical use of the products they sold that a few questions from contractors in the audience confused the speaker to such an extent that he began to claim for his goods things they could not do and to deny those things which his employer was spending money to prove they could do.

♦ ♦

I have heard a manufacturer himself make the mistake of talking for two hours and forty minutes on the last day of a state convention when the chairman introduced him with the direct statement that the proceedings must be rushed in order that the delegates could catch a late afternoon train.

♦ ♦

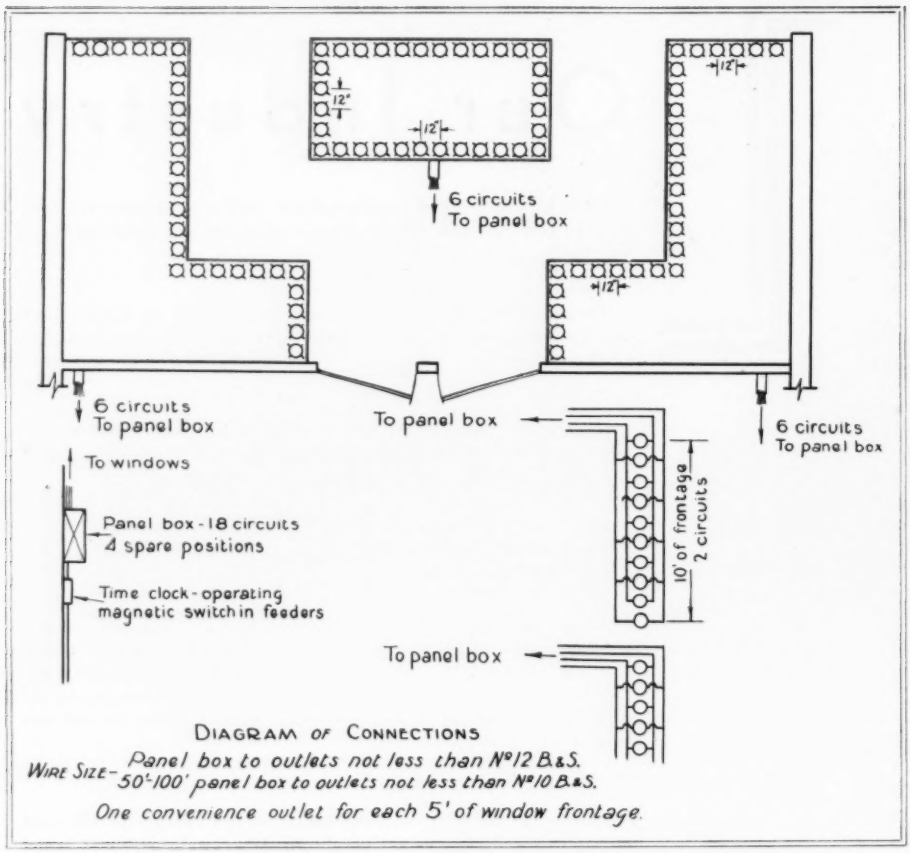
And again within the past few days representatives selling stokers forgot that contractors are interested in heating plant efficiency and performance and avoided answering engineering questions in order to tell of the pleasure which home owners get out of removing clinkers—apparently a new and enjoyable game which will keep men at home. One home owner according to a salesman, can usually be found now sitting on his cellar steps breathlessly waiting the forming of a new clinker.

♦ ♦

When thinking of the elimination of waste, don't forget the speakers' platform.

◆

A contractor, reported in this issue, used the radio to get an order from a customer traveling in China.



Your electrician can follow this diagram for window display wiring

Command Attention with Proper Window Lighting

By C. E. WEITZ,
Engineering Dept.,
General Electric Co.,
Nela Park, Cleveland

This is the first of two articles on window lighting, secured from experts in the "light laboratory" at Nela Park

LIGHTING effects are more important than is dreamed of by the thousands of people who stand on the other side of the window. Properly handled, they serve not only to attract attention to the merchandise, but also to create a favorable impression of the store itself. The effectiveness of the window is dependent upon the illumination both from the standpoint of permitting the display to be examined, and from the manner in which a brightly lighted window will assert itself to the passer-by, in an attractive way.

Tests to determine the effect of varying degrees of window illumination on the attracting power of display windows were made some time ago in three stores in well-lighted downtown districts. When the illumination was increased from 40 to 125 watts per foot, 33% more people stopped to look at the displays. When the illumination was raised to 200 watts per running foot, a further increase of 40% was noted in the number of persons attracted to the displays.

With this in mind, the prime consideration in a window installation should be one of sufficient outlets to permit the flexibility and control of illumination and lighting effects that are dsirable for any particular display. The use of colored lighting in windows is becoming more general as an attention-getting medium, since it adds an unlimited field for variation in decorative effects.

Amount of Light Required

The illumination requirements of display windows will, of course, vary considerably with the character of the store and its location. Manifestly the store in a small town or in a suburban section, where the surroundings are not bright, will not require the window illumination of a large downtown store in a "white way" district where the windows vie with one another to attract the attention of the shoppers. The competition of windows demands a better lighting effort here.

The usual desirable window illumination ranges from 50 to 150 foot candles. Show windows of small stores in suburban districts, where the street illumination is not bright, might be considered well lighted with 25–50 foot-candles, while the same store on a brightly lighted street might require 50–100 foot candles to appear equally well lighted. Similarly, a clothing store window displaying dark goods in a suburban section might well have 50–75 foot candles, whereas among brightly lighted surroundings double this amount would be desirable. Exclusive stores or large department stores will likewise find it profitable to have 150 foot candles or more, depending in a measure upon the color of the merchandise on display.

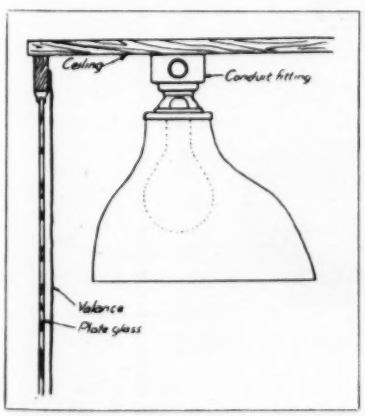
Window Lighting Equipment

For the vast majority of cases, display windows can be lighted most effectively and economically by the use of reflectors designed specifically for this service. Ordinary general lighting luminaires, such as used in the store interior, diffuse the light broadly and when used in windows do not concentrate the light strongly on the display; consequently, a great portion of the light is lost upon the ceiling, upper side walls, and through the window upon the street. Then, too, such units must necessarily be mounted near the center of the window ceiling and the direction of the light is such that high objects near the front of the window will be in their own shadows.

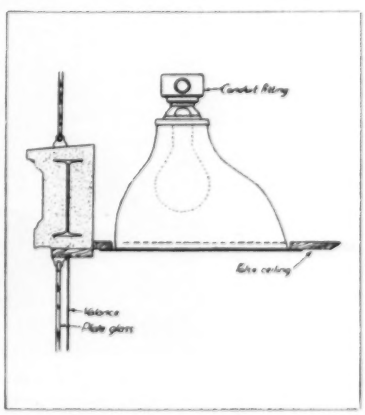
The common types of window lighting reflectors have reflecting surfaces of prismatic glass, mir-

POOR
ATTRACTIVNESS 100%
100 watt lamps 24 to 30 inches apart
40 watts per running foot
$4.33
Cost of lamps and current per foot per year
Profit from lighted window per foot per year
GOOD
ATTRACTIVNESS 133%
150 watt lamps 12 to 15 inches apart
125 to 150 watts per running foot
$14.00
Cost of lamps and current per foot per year
Profit from lighted window per foot per year
EXCELLENT
ATTRACTIVNESS 173%
200 watt lamps 12 inches apart
200 watts per running foot
$21.50
Cost of lamps and current per foot per year
Profit from lighted window per foot per year

The above illustrations show the results of tests on lighting in 100 show windows



At left is one way of mounting reflector, with valance hiding it from the street. At right is reflector set flush with ceiling



rored glass, or metal, which efficiently direct the light upon the display. These are available in several shapes to provide correct illumination for either deep or shallow windows. Care should be taken to choose that particular type of reflector which will most effectively distribute the light according to the window proportions. Charts are available from the reflector manufacturers for determining the proper reflector for each particular type of display window.

In addition to the general overhead lighting, the use of spotlights, floodlights, and footlights is recommended for high class windows where greater flexibility in lighting effects is desired.

Spotlights serve to focus attention on a feature article in the window by "spotting it" in much the same manner as an important character on the stage is brought into prominence by means of a spotlight. Spotlight effects are particularly pleasing in connection with color lighting.

Window floodlights are used for much the same purpose as window spotlights, though usually the light is not concentrated as sharply but is spread gradually from a strong center beam. They may be used for daytime lighting.

Footlights may be built in the window or they may be obtained in portable sections. Provision is usually made for the use of color with these as well as with all other lighting accessories. Footlights offer a means of adding variety in the lighting when used alone; when used in conjunction with overhead lamps they serve the very useful purpose of softening harsh shadows which frequently occur when the light comes predominantly from one direction. For example, without the use of footlights a broad-brimmed hat worn by a wax model would cast a heavy shadow over the features.

The Window Lighting Installation

The test of a good window is efficient distribution of light upon the display without loss upon the street, and without glare from exposed lamps. The usual practice is to locate outlets at regular intervals along the window front, and along the sides when the window is deep. In island windows, concentrating-type reflectors should be placed around the entire window.

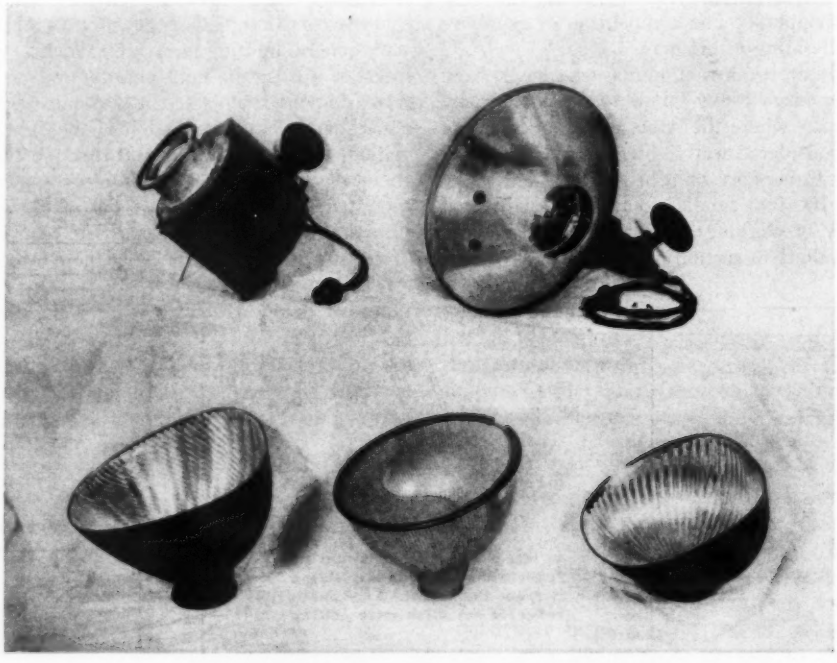
The actual method of installing window lighting equipment depends entirely upon the construction of the window. Unless the ceiling is especially high, the reflectors are generally mounted on the ceiling close to the window. Frequently, it is desirable to conceal the equipment in a box or trough built in the upper front corner of the window. Where the window has a false ceiling, it may be preferable to install the reflectors above the ceiling with the openings flush with the ceiling, using metal molding for finishing.

Where the distance above the window glass to the ceiling is fairly large, it will usually be found best to support the reflectors by brackets on the transom bar close above the window glass either by individual brackets for each unit or by supporting the conduit from which the units are suspended.

Where the windows are open backed or where the background is polished, a curtain or valance should be used behind the units to screen them from the view of persons within the store and to eliminate their reflection in the polished background. A curtain should always be used to conceal the lighting units from view from the street.

The actual spacing and size of lamps used will depend upon the illumination requirements. In the better grade

(Continued on Page 144)



Typical pieces of window lighting equipment

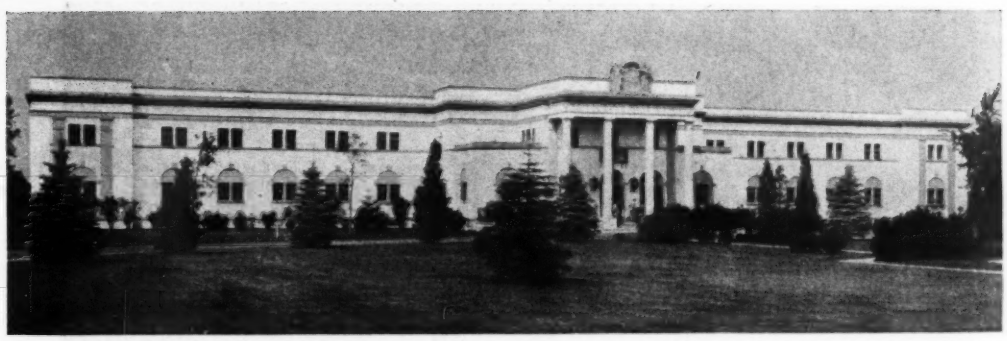


Fig. 1.—The Lincoln Baths, located at Saratoga Springs, N. Y. As will be noted from the plan at the bottom of this page, the complete structure is three times the size of the building shown

This Plumbing System Will Give One Thousand Baths A Day

By F. N. BOLLES

In this installation, it is a matter of adapting the equipment and piping so as to retain the original qualities of the water, instead, as in the majority of cases, of treating the water to minimize piping and equipment problems. Many interesting arrangements and designs resulted which have a wide application

THE new Lincoln Bath building, at Saratoga Springs, N. Y., recently opened to the public, embodies many unusual features from the sanitary and plumbing standpoint.

Something of its beauty may be seen from the view given in Fig. 1. From this view, however, the real extent of the building is not seen. Fig. 2, which is a simple outline plan of the building, shows that behind the beautiful structure seen in Fig. 1 there are in reality two other similar buildings, the three being connected together as shown in Fig. 2.

Saratoga Springs has been taken over by the state of New York and is now a state reservation under the jurisdiction of the conservation department. Additional bathhouses similar to the Lincoln Baths described in this article are to be constructed, also administration buildings and a general development of the entire reservation.

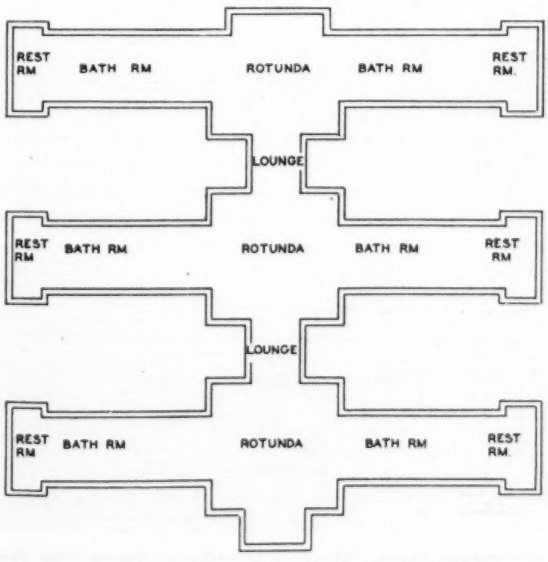


Fig. 2.—Outline plan of the Lincoln Baths building

For those not familiar with the Saratoga waters and their uses a brief description will be given to enable them to fully understand the somewhat unusual features of design employed in the case of the Lincoln Baths.

There are about one thousand different springs at Saratoga, each one different as to chemical analysis, but all high in carbonic gas. These waters, even from the days of the Indians, have been known to possess valuable curative and alleviative powers for certain classes of human ailments, not only when taken internally but also in the form of hot baths.

The conveying of these waters in pipes, however, especially when heated, has always been a problem, for their pitting and scaling effect upon most metals is very

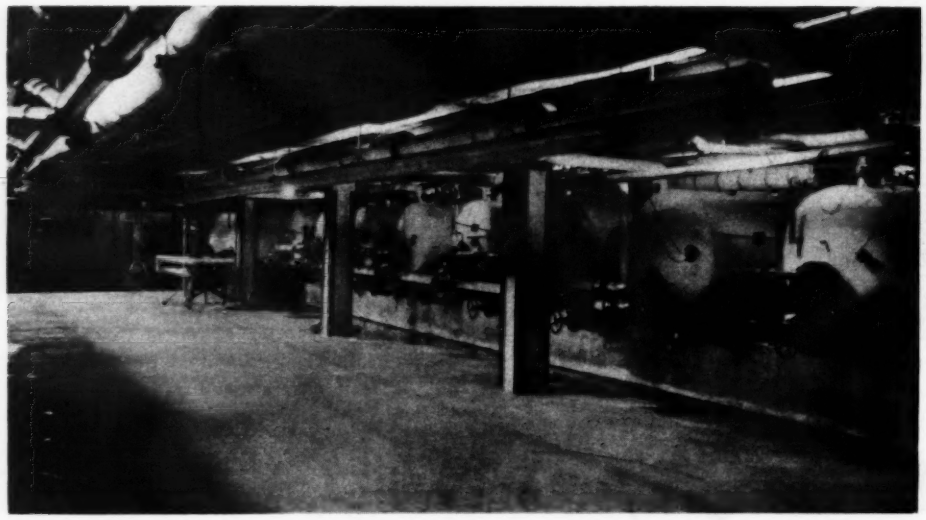


Fig. 3.—This shows the tank room in the basement. The two pre-heaters are at the extreme left of the picture and the six mineral water heaters and the one fresh water heater are in the foreground

pronounced, also the high content of carbonic gas adds complications.

In the case of the Lincoln Baths, the spring used has a super-saturation of gas of one hundred and twenty-five per cent. It is easy to understand that when water of this character is heated, every precaution must be taken to provide for the expansion of this gas. However, as it is the gas in the water which gives it its great therapeutic value, as little as possible of the gas only can be allowed to escape before the water reaches the bathtubs.

The Lincoln Baths have approximately two hundred and fifty bathtubs, each in a separate compartment. The average time for a bath is twenty minutes, so that often over a thousand patients per day are treated in this one bathhouse, not to mention the other smaller bath establishments on the reservation.

Water Supply and Heating

The water is pumped from the ground from a number of deep wells, and conveyed to the mineral water pre-heaters, through these to the mineral water heaters, and then to the bathtubs. The mineral water heaters, which are six in number, are supplied with steam at one hundred and twenty-five pounds pressure, and the condensed steam from these heaters is passed through the two mineral water pre-heaters, thus raising the temperature of the spring water materially before it reaches the main live steam heaters.

Fig. 3 gives a view of this battery of mineral water heaters and pre-heaters. The two pre-heaters are at the extreme left, and the six mineral water heaters and one fresh water heater are in the foreground.

Connections for these nine hot water tanks are seen in the elevation shown in Fig. 4. This is a rear elevation,—therefore the location of the tanks is reversed as compared to their location in Fig. 3.

It is an interesting fact that at the end of each season there is a hard scale on the inside of the heaters, which is in some cases over one inch in thickness. This scale, which is red-brown in color, is very hard, but also brittle and can be knocked loose with a hammer and chisel. All of the piping acquires the same scale during the season's operation, and for this reason has been so located that it can be taken down in sections and pounded with a sledge to loosen the scale. For this reason, most of the piping has flanged fittings. A fresh water line is provided in front of all heaters, at ceiling, with frequent hose bibs. It has been found that a thorough washing down of the inside of these heaters once each day materially retards the formation of the scale. All the heaters are set astride a continuous concrete blow-off trench, which empties into a sump pit below the basement floor level, equipped with automatic sump pumps. The discharge from these pumps is carried to the main sub-drainage sewer, which leads to an open air leaching field some 500 ft. distant from the building. Here again the problem of the scale is a troublesome one, for a hard, brittle crust will form over the surface of this leaching

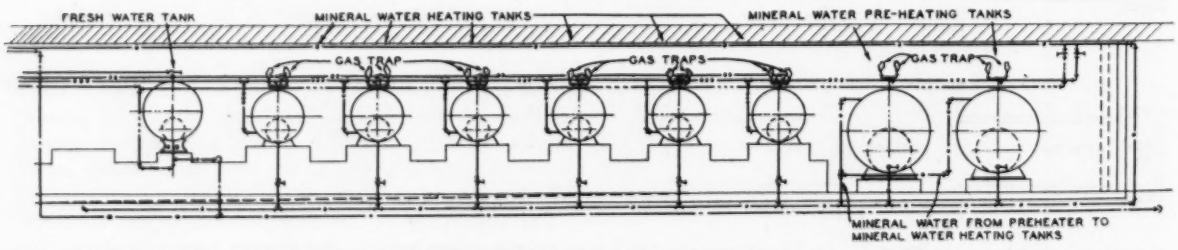


Fig. 4.—These are the connections for the heaters shown in the photograph above. The rear elevation is drawn with the result that the location of the tanks is reversed as compared with Fig. 3

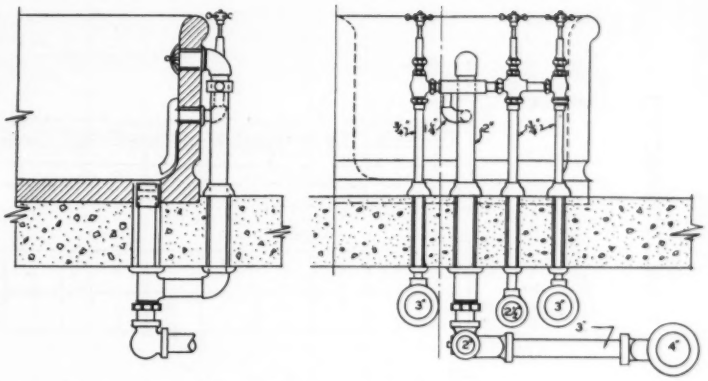


Fig. 5.—One of the problems was to retain as much of the natural gas in the mineral water as possible. One of the results was the application of a special inlet for the bathtubs sketches in this figure

field, unless it is raked over daily and thoroughly cleaned out once each season. Each heater and pre-heater is equipped with two ¾-in. gas eliminating traps of the float type, which exhaust any collected air and gas at tops of tanks. These are set to act very infrequently, so as to retain as much gas as possible in the water. All of the heaters are supplied with steam at 125 lb. pressure, piped through an underground pipe tunnel from a central power plant on the reservation. The condensed steam from the mineral water heaters is collected in a pumping trap and passed through the two mineral water preheaters, and then pumped back to the feed water heater at the boiler plant. From the mineral water heaters the water is piped along the basement ceiling to the center aisle of the basement, and along this aisle to the several vertical pipe shafts up to the first and second floors.

On the first floor ceiling the pipes are distributed through the six wings of the building to supply the second floor tubs. The vertical pipe shafts were made sufficiently large to permit of a man working in them to make repairs or to remove the sections of piping for removal of scale. Both the fresh and mineral hot water systems have return circulation lines leading back to the heaters in the basement.

By referring to the sectional view in Fig. 5, it will be noted that the water is supplied to the bathtubs at the bottom by means of a special diffusive type nozzle. This is for the purpose of keeping as much of the natural gas in the water as possible, for the benefit of the bather, and the result is that a tub full of water is effervescent and sparkling. Also it will be noted from the drawing that three kinds of water are piped to each tub, namely, hot mineral water, cold mineral water and hot fresh water, each with a separate valve.

All exposed piping in the bathrooms is chromium plated to withstand the action of the mineral water. The tub wastes and overflows are 2 in. in order to empty the tubs quickly. It will be noted that no traps were provided on tub wastes. All bathtubs are 5 ft. 6 in. long, 30 in. wide and 21 in. deep, inside dimensions, which are somewhat unusual, and required special moulds and manufacture. The material was solid porcelain. Tile and metal partitions separate the bath cubicals.

Special Equipment Installed

One of the most interesting features of the Lincoln Baths is the very complete hydro-therapeutic facilities provided. One corner of the therapeutic room is shown in Fig. 6, with one of the irrigation slabs, the tilting basin and shampoo spray. Above the slab may be seen the vichy douche equipment with its six sprays, raising and lowering device, dial thermometers and pressure gauges. There are also Scotch douches, needle baths, corner post showers and colon irrigation slabs. The electric bath cabinets may also be seen in the picture, at the rear of the room.

In this installation, which is so full of unusual conditions and unusual practice, one of the features of chief interest is the twelve bath rooms, which contain a total of something like 250 bathtubs. These baths are on the two floors and take up the large part of the floor space of the building.

As seen in Fig. 2, the building contains six wings,

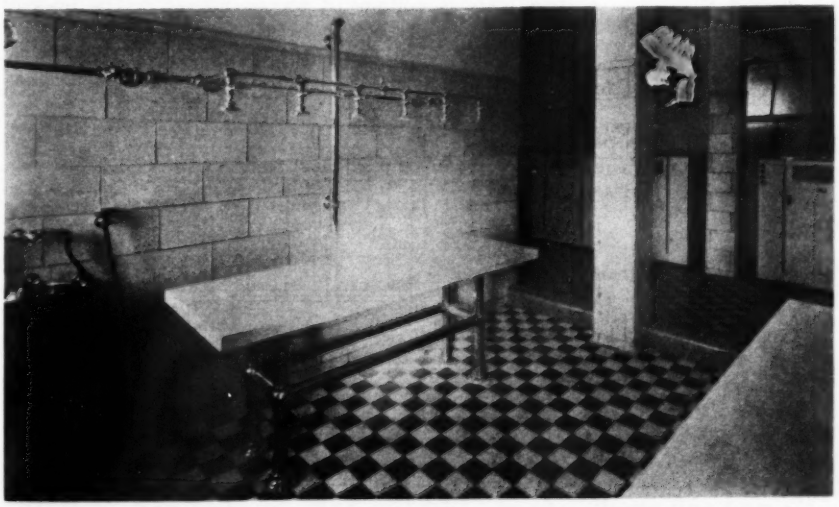


Fig. 6.—This is one corner of the therapeutic room showing the irrigation slabs, the tilting basin, shampoo spray and other items of equipment.

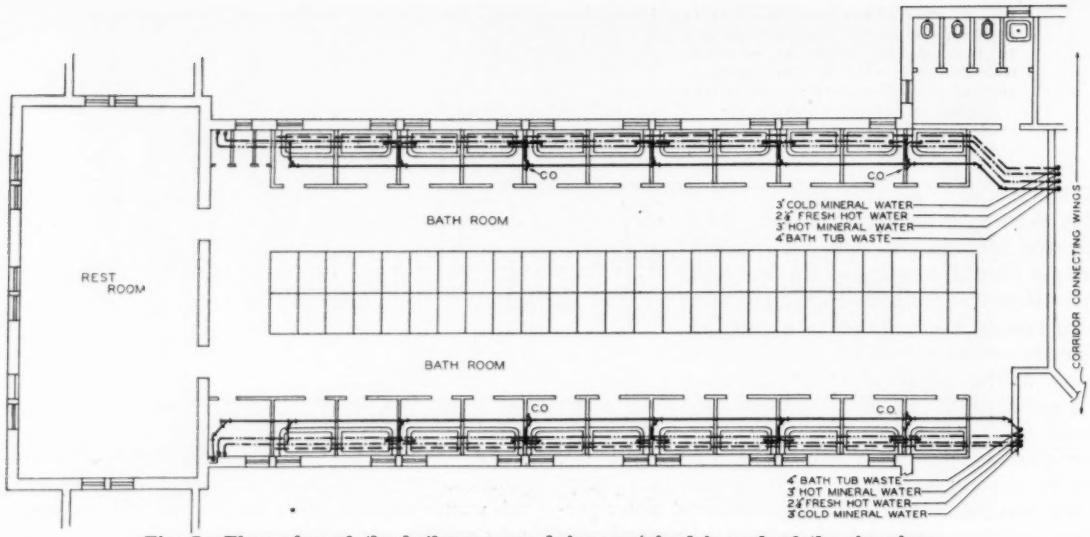


Fig. 7.—Floor plan of the bathroom, one being contained in each of the six wings.

and in each of the wings, on the first and second floors, are these large bathrooms. A floor plan of one of them is shown in Fig. 7. Each bathroom has a rest room adjoining, also a fully equipped toilet room.

As noted in Fig. 7, the bathtubs are handled in pairs.

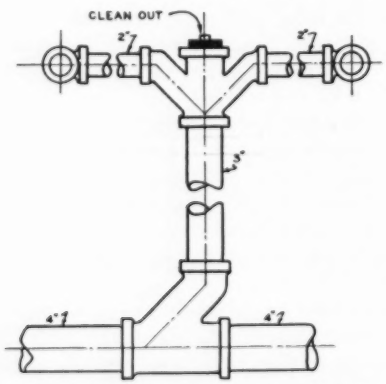


Fig. 8.—The bathtubs are handled in pairs and this drawing illustrates how they are connected

In Fig. 8 is shown the method of installing these waste connections.

The bathtub layout is simple. Under each line of bathtubs four lines of pipe are carried,—the 4-in. waste line, 3-in. hot mineral water, 2½-in. fresh hot water and 3-in. cold mineral water lines.

Large Main Supply Lines

It will be observed that the main supply lines are of unusually large size. There are two reasons for this. In the first place, it will often happen that many tubs will be in use at the same time and water being drawn at the same instant through many different branches. In order that delivery may not be cut down due to this fact, a larger size will be required than usual. The second reason for the large size is the fact that, as previously stated, the filling up of the pipes with deposit is rapid and soon cuts down the available area of the pipe. This condition also makes necessary the use of large sized mains.

The fresh hot water main is of smaller size than the mineral water lines, due to the fact that the filling of the pipe with scale does not have to be allowed for.

Ordinarily if a water produced such scale as this mineral water produces measures would be taken to treat the water before delivering it to the tanks, to overcome or greatly reduce its scale-producing qualities. On this case, however, as already pointed out, the very qualities in the water which produce this trouble are just the qualities that the users of the baths desire to have retained in the water. Under such circumstances as these, it is to be presumed that the method employed of taking down the piping and pounding the scale out of the pipes is about the only thing that can be done.

Each of the large bathrooms has its own toilet room, equipped in the same high-grade manner as the main bathrooms. Two of these toilet rooms are shown in Fig. 9. Concerning this part of the plumbing installation there is nothing of special interest. The lines of water closets are served by circuit venting.

The building is unusual in its design and in its equipment.

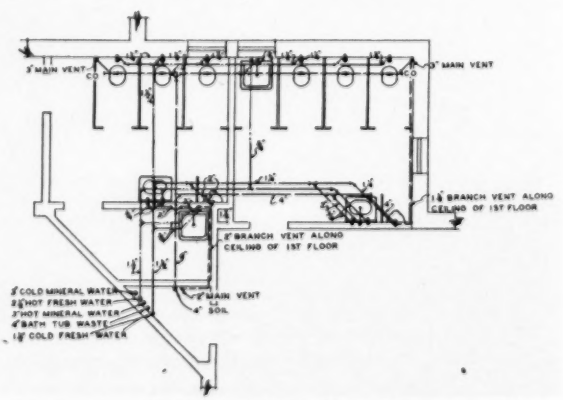


Fig. 9.—Each bathroom has its own toilet room, two layouts being shown here

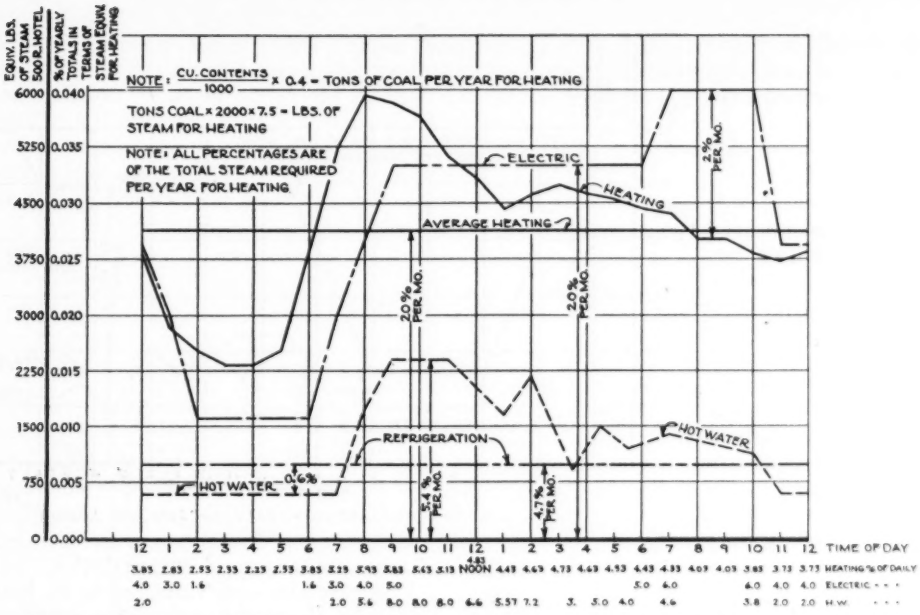

EQUIV. LBS. OF STEAM 500 R. HOTEL
% OF YEARLY TOTALS IN TERMS OF STEAM EQUIV. FOR HEATING
NOTE: CU. CONTENTS / 1000 x 0.4 = TONS OF COAL PER YEAR FOR HEATING
TONS COAL x 2000 x 7.5 = LBS. OF STEAM FOR HEATING
NOTE: ALL PERCENTAGES ARE OF THE TOTAL STEAM REQUIRED PER YEAR FOR HEATING
ELECTRIC
HEATING
AVERAGE HEATING
2% PER MO.
20% PER MO.
20% PER MO.
REFRIGERATION
HOT WATER
HOT WATER
0.6%
5.4% PER MO.
4.7% PER MO.
TIME OF DAY
HEATING % OF DAILY
ELECTRIC
H.W.

Fig. 1.—January and February hotel load curves in terms of steam equivalents for heating[a]

Using Waste Steam for Heating

By PERRY WEST*

ONE of the first installations for the use of condensate from district heating steam was made twenty years ago in the Hotel Pontchartrain at Detroit. It was built on a large scale and worked successfully, until the building was torn down, according to the one who designed the job. Also, the same system has been installed in several buildings since then. All of these jobs furnished pure soft water.

The hotel installation saved all of the condensate, which was taken from the overflow of the meters. It was pumped through a filter, thence to the various parts of the building where it was used, and the surplus was delivered to the laundry. All of the circulating ice water lines were supplied with it and it was used for making from twenty to twenty-five tons of ice per day. It was used also to supply the water heaters, which made a saving in the amount of steam required to bring the water up to the necessary temperature. It was found necessary to filter the water used for laundry and drinking purposes, as frequently moulding sand was washed out of the system, especially at the start of the heating season.

Information from St. Louis advises of further experiences along this line, as follows:

As to using condensate for purposes other than hot water, one hotel in St. Louis uses it for making ice. There are many other industrial requirements for distilled water for which condensate could be utilized.

A large department store in St. Louis has been using condensate as a hot water supply for the last three years. The hot water thus supplied is used in the restaurant for cooking as well as in the beauty shop.

With the design of the system used, the condensate float tank acts as a settling basin for any heavy solids, such as flakes of rust or core sand, with the result that in this instance filters are not necessary. There is a small filter installed in the inlet of the pump which was inspected once since the installation and it was found to be practically clear of foreign matter. It can be seen easily how filters might be required on some installations, however.

The only signs of rusty water which have been noticed in the St. Louis installation have occurred when the steam is first turned on in the system. It is necessary to drain the condensate to the sewer for approximately one hour until it clears up.

The matter of utilizing exhaust steam for heating purposes has both simple and complicated applications ordinarily depending upon the size of the installation, the source of the exhaust steam and its availability as regards steadiness of flow.

Of late, increased attention has been given to this subject as evidenced by one section of the program of the recent Pittsburgh convention of the American Society of Heating and Ventilating Engineers, at which a paper covering it was read.

It is interesting to note the sources of waste heat.

* Excerpts from paper read at the 37th annual meeting of the American Society of Heating and Ventilating Engineers at Pittsburgh, Pa., 1931. Paper and illustrations copyright, 1930, American Society of Heating and Ventilating Engineers.

[a] Ventilation Steam Requirements (15%) not included. Generators at 25 lb. per indicated horsepower per hour; 30 tons of refrigeration for 500 rooms at 25 lb. per indicated horsepower per hour. No allowance for condensation (about 20 per cent).

They include electric or power generation, industrial and condensing processes, furnace gases and district heating.

Where heat and power or electric current are required, according to the above mentioned A. S. H. V. E. paper, steam may first be used for generating the power or electric current and the exhaust from the generating units then used for heating. Likewise in many industrial processes requiring heat at certain temperatures, steam may first be passed through engines or turbines, for generating any power or electric current required and used for the processes at the pressure required to give the desired temperature.

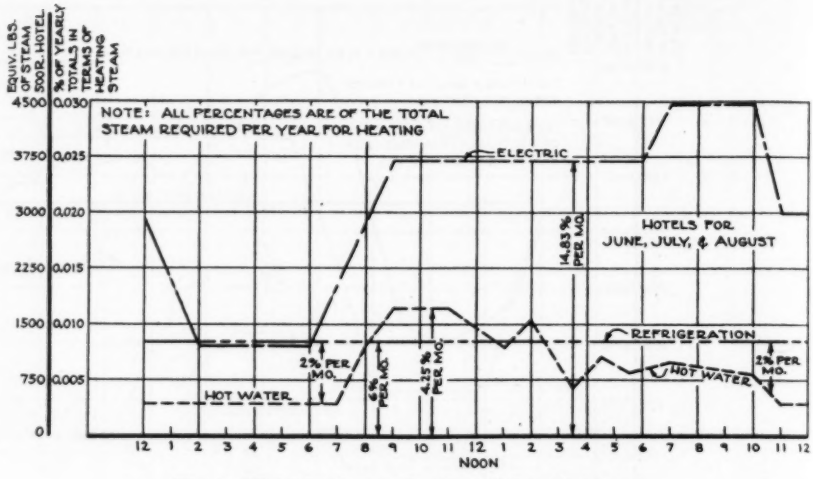

EQUIV. LBS. OF STEAM 500 R. HOTEL
% OF YEARLY TOTALS IN TERMS OF HEATING STEAM
4500 0.030
3750 0.025
3000 0.020
2250 0.015
1500 0.010
750 0.005
0
NOTE: ALL PERCENTAGES ARE OF THE TOTAL STEAM REQUIRED PER YEAR FOR HEATING
ELECTRIC
HOTELS FOR JUNE, JULY, & AUGUST
14.83 % PER MO.
REFRIGERATION
HOT WATER
2% PER MO.
6% PER MO.
4.15 % PER MO.
HOT WATER
2% PER MO.
12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12
NOON

Fig. 2.—Hotel load curve for June, July and August

The exhaust steam may be circulated directly through the radiators, heaters, air heaters, humidifiers or other elements of a heating, or of a heating and ventilating system, or it may be used for heating water which in turn may be circulated through similar elements of a hot water heating system. It may also be used for domestic water heating.

Frequently there is a fluctuating load on the power or electric generating apparatus which in turn produces fluctuating quantities of exhaust steam. The quantity of steam required for heating is also variable. These two variables do not, as a rule, coincide so that the total quantity of exhaust steam produced may be either equal to a certain percentage less or a certain percentage more than the total quantity of steam required for heating, or for heating and ventilating either during the heating season or throughout the year. These relations change throughout the day and night and throughout the seasons of the year, for any given installation.

There are also wide variations in the heating requirements due to changes in weather conditions, and wide variations in the exhaust produced due to such changes as in the demands for lighting on dark or light days, for elevator power during rush or slack periods, for air conditioning on good or bad days and for many other variables in the demands for power or light, depending on the character of building and its operating requirements.

Adjustment Between Heating Loads and Exhaust Steam

The way in which the quantities of exhaust steam produced and the quantities of steam required during the various intervals of time throughout the year coincide will determine how much may be used, how much must be thrown away and how much live steam must be used to supplement the exhaust steam deficit, unless some means is adopted for adjusting the supply to the demand.

One method of making this adjustment is to store exhaust steam or its equivalent in heat, when it is in excess of the demand, and feed this to the system when the exhaust being produced is below the demand. Hot water accumulators may be used for this purpose by storing heat in water to be fed to the boilers, in water to be used for domestic hot water service, in water to be used in a hot water heating system, in water to be used for process work, or for some combination of these purposes.

Another method is to adjust the quantity of exhaust produced somewhat in concordance with the heating demand. A bleeder turbine from which the exhaust may be taken for the lower heat-

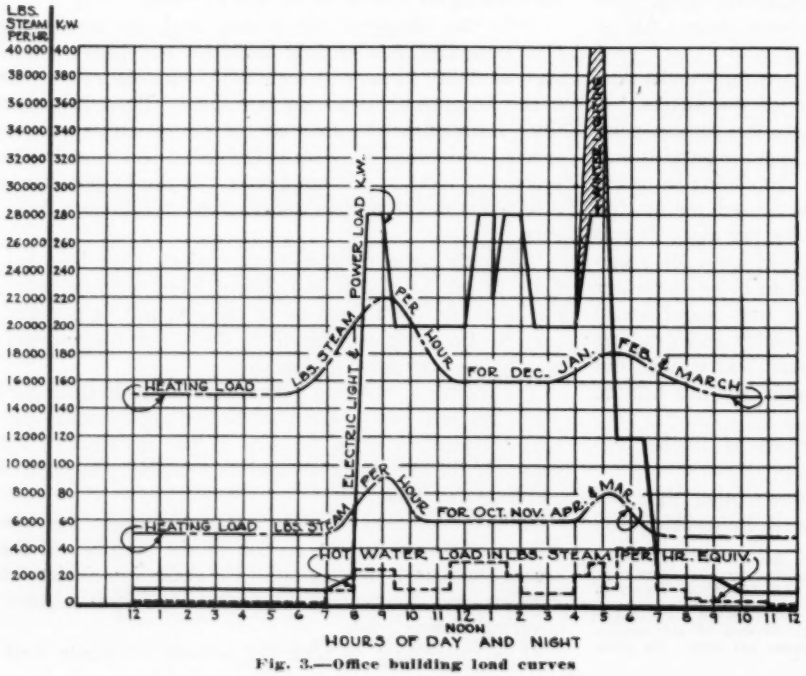


Fig. 3.—Office building load curves

ing demands and additional higher pressure steam from its successive stages as this demand goes up is frequently a satisfactory solution for a case where the normal exhaust is deficient. If such a turbine is also arranged to run condensing under various controllable degrees of vacuum and arrangements are made for either circulating the exhaust through the heating system under various

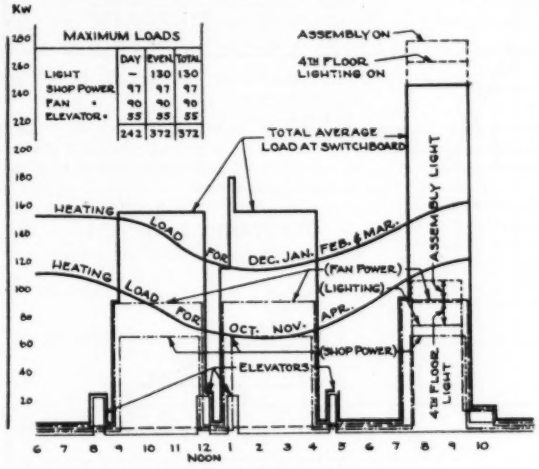


Fig. 4.—High school load curves

pressures above and below atmospheric pressure or for similarly using the exhaust for heating water, such an arrangement may adjust the exhaust to a wide variation of heating demands.

With such an arrangement, the exhaust supply may be automatically adjusted to the demand by having automatic control of the vacuum in the turbine from an outdoor thermostat operating on the flow of cooling water on the condenser and remote control valves in the bleeder steam supplies controlled from the same or a co-ordinate thermostat. This arrangement has certain advantages over that in which exhaust steam is discharged to the atmosphere when it is in excess of the demand and where live steam at boiler pressure is used to make up the deficit when the exhaust is insufficient. For example, the condensing of the excess exhaust steam increases the efficiency of the turbine so that the total heat rejected to the condenser is less than would otherwise be thrown away, while the use of the bleeder steam conserves heat by allowing a certain amount of power to be generated from this steam before it is fed to the heating system.

A modification of this method of adjustment, especially as between the heating and non-heating seasons, is to use engines or turbines which may be run condensing throughout the non-heating season and non-condensing throughout the heating season. Another modification is to have non-condensing engines or turbines for use during the heating season and low pressure exhaust condensing turbines for using the exhaust steam from these during the non-heating season. This latter arrangement affords a high efficiency since each unit operates under conditions for which it may be best designed. The low pressure turbine in this case may even be made a bleeder turbine and be arranged to operate on various degrees of vacuum with automatic control as previously stated. While this arrangement of units generally shows a high overall economy there is some disadvantage in installing condensing units which have to be frequently started up or shut down and by-passed, and hence a straight bleeder turbine is frequently used as a matter of simplicity.

Still another method is to adjust the heating demand so that it will balance as nearly as possible the exhaust steam produced. The use of hand operated or automatic remote-control sectional, or zone, regulating valves for separately controlling the various sides and vertical sections of a building in accordance with the exposures, wind velocities, sunshine, etc., the use of automatic temperature control, fractional distribution of steam, distribution of steam under varying degrees of vacuum and the use of forced hot water with temperature control, all tend to keep the demand commensurate with the actual weather requirements, thereby reducing the maximum demand and at the same time the amount of fluctuation by supplying heat only where it is needed.

Heating Load and Amount of Exhaust Steam Available

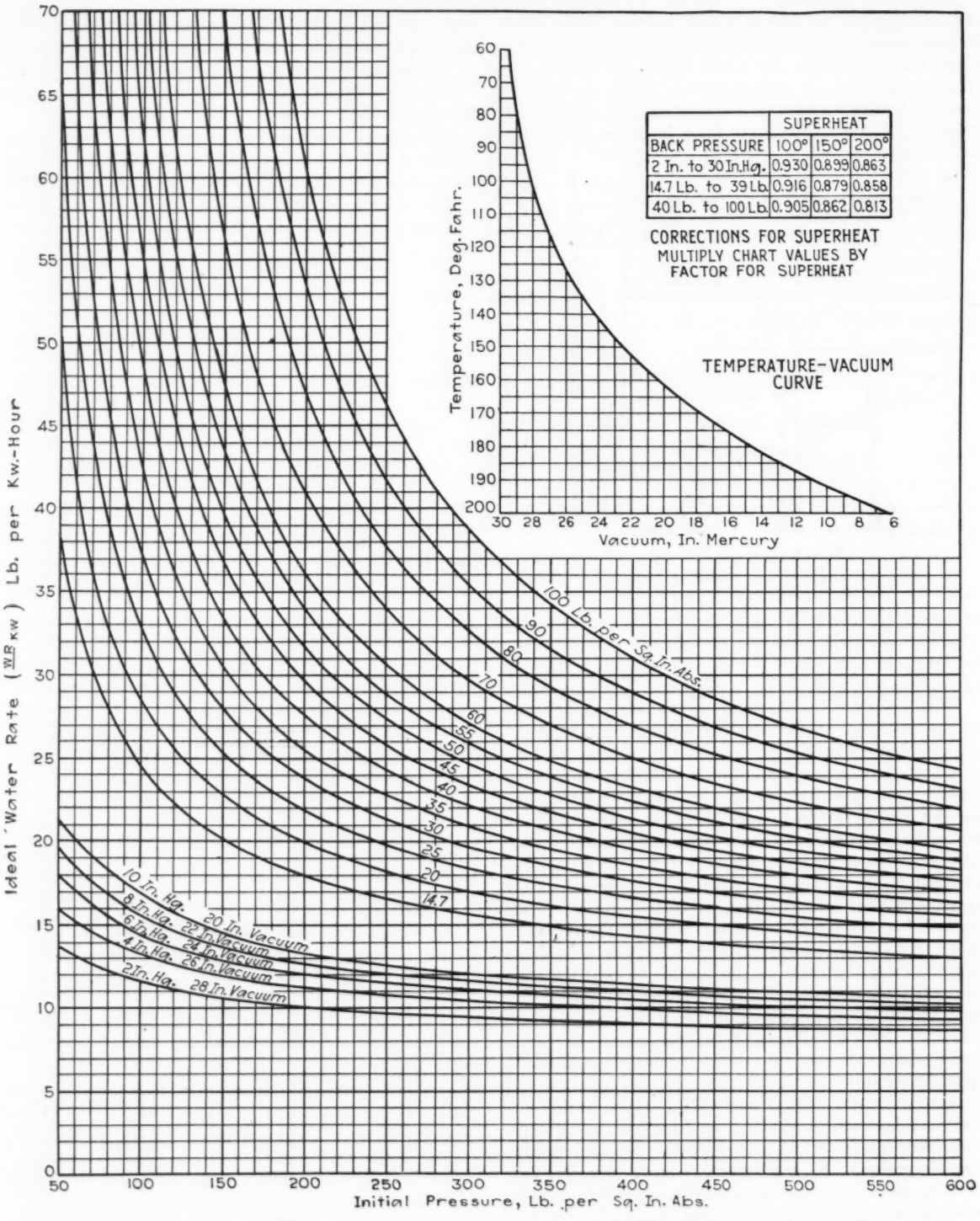
In all of these adjustments the question of relative economies and the cost to produce them must necessarily enter into the problem. The efficiencies of engines and turbines vary with the types, sizes, speeds, load condi-

Table 1.—Approximate Full Load Efficiencies for Non-Condensing Engine and Multi-Stage Turbo-Generator (Geared Type)

Rated Capacity at Full Load Kw.	Mechanical Efficiencies of Engine Units	Mechanical Efficiencies of Turbine Units	Brake Potential Efficiency Ratio of Turbines	(a)Factors for Converting Ideal Water Rates to Actual Water Rates (for Turbines only)	Generator Efficiencies at Full Load
100	0.900	0.930	0.45	2.22	0.932
200	0.905	0.935	0.50	2.00	0.934
300	0.910	0.940	0.54	1.85	0.936
400	0.915	0.942	0.58	1.74	0.938
500	0.920	0.945	0.61	1.64	0.940
600	0.925	0.947	0.64	1.56	0.942
750	0.930	0.950	0.65	1.54	0.944
1000	0.935	0.952	0.67	1.49	0.945
1250	0.940	0.955	0.67	1.49	0.947
1500	0.945	0.957	0.67	1.49	0.950
2000	0.950	0.960	0.68	1.45	0.954
Condensing Turbines					
500		0.950	0.68	1.45	0.940
600		0.952	0.69	1.44	0.942
750		0.954	0.70	1.43	0.944
1000		0.956	0.70	1.43	0.945
1250		0.958	0.70	1.43	0.947
1500		0.960	0.70	1.43	0.950
2000		0.960	0.70	1.43	0.954

	(For Non-Condensing Engines only)
Single valve automatic engine units up to 400 kw	1.64
Four valve automatic engine units up to 400 kw	1.42
Unaflow engine units up to 400 kw	1.20

(a) These factors are for indicated engine or brake turbine loads and do not take into account the mechanical efficiency of engine units or generator efficiencies for either engine or turbine units; but do include the mechanical efficiency of turbines.



BACK PRESSURE	SUPERHEAT 100°	150°	200°
2 In. to 30 In. Hg.	0.930	0.899	0.863
14.7 Lb. to 39 Lb.	0.916	0.879	0.858
40 Lb. to 100 Lb.	0.905	0.862	0.813

Fig. 5.—Ideal water rate per kilowatt hour with dry saturated steam for various initial pressures and back pressures [a]

tions and with the steam pressure, temperature, back pressure or vacuum under which they operate. Actual guaranteed water rates for the units and conditions to be employed on any particular operation should be obtained from several reputable makers before endeavoring to estimate the amount of exhaust steam available.

Load conditions and heating requirements must then be computed for the various hours of the day and night and for the various days of the year. Generally, a 24-hour day load and heating requirement chart for each of the four seasons of the year will be sufficient although in many cases the load may be different for some

[a] For ideal water rate per indicated horsepower hour, divide these values by 1.34.

days of each week and of course over holidays and other non-operating periods.

Typical load curves are shown by Figs. 1, 2, 3, and 4. In the hotel diagrams (Figs. 1 and 2) it will be noted that the steam required for generating the refrigeration power is shown separately and is not included in the steam required to generate the remaining electric current or power. This is for the purpose of comparing it with the hot water load, which it practically equals in all of these charts. For this reason the refrigerating apparatus in this class of building may frequently be

Table 2.—Factors by Which to Multiply Actual Water Rates at Full Load to Obtain Estimated Water Rates at Fractional Loads on Non-Condensing Engine and Turbine Driven Electric Generating Units [a]

Size and Kind of Unit	Load			
	¼	½	¾	Full
Single valve engines up to 400 kw..	1.32	1.09	1.03	1.00
Four valve engines up to 400 kw...	1.30	1.08	1.03	1.00
Unaflow engines up to 400 kw.....	1.10	1.02	0.980	1.00
Geared turbines up to 600 kw.....	1.57	1.25	1.05	1.00
Geared turbines 600 to 2000 kw....	1.50	1.20	1.04	1.00

[a] These values are for indicated or brake loads and do not take into account variations in generator efficiencies under various load conditions. Generator efficiencies vary from 85 per cent at one quarter load to 95 per cent at full load.

steam driven and the exhaust thus produced be used with good economy for heating the domestic hot water even where the remainder of the electric current is purchased from the outside and steam or hot water direct from the boiler plant is used for heating.

Procedure for Making Analysis

In making an analysis of any particular operation it is necessary to develop charts similar to Figs. 1, 2, 3 and 4. The total steam required for heating per square foot of direct radiation, or its equivalent, per season, for different classes of buildings is as follows (referring to chapter 24, A. S. H. V. E. Guide, 1931):

For manufacturing or commercial loft type, where steam is used to heat the premises during the day hours to maintain 65 to 68 F from 9 A. M. to 5 P. M. No Sunday or holiday use and no night use. Factor: 325 lb. per square foot of radiation per season.

For office buildings using steam during daylight hours only to maintain 70 F from 9 A. M. to 6 P. M. for approximately 240 days (heating season). No night use. Factor: 400 lb. per square foot of radiation per season.

For office buildings using steam during day hours and at night when required to 7, 8 and 9 P. M. (customary where there are stock brokers or banking offices), 204 days. Factor: 500 lb. per square foot of radiation per season.

For residences of the block type (not detached) where high-class heating service is required somewhat similar to apartment buildings. Factor: 550 lb. per square foot of radiation per season.

For apartment houses where high-class heating service is required. (Steam off at midnight.) Factor: 650 lb. per square foot of radiation per season.

For hotels (commercial type) where very high-class service is required; 24-hour service. Factor: 800 lb. per square foot of radiation per season.

Of the total steam required for any particular service, the following percentages of the whole may be apportioned to the various months of the heating season in the colder climates: January, 20 per cent; February, 20 per cent; March, 15 per cent; April, 10 per cent; May, 5 per cent; October, 6 per cent; November, 8 per cent; December, 16 per cent.

The first step is to determine the amount of exhaust steam available. Then it is necessary to estimate the amount of heat available in this steam for heating, etc., after it has passed through the generating units

To determine the amount of exhaust steam available, it is necessary first to develop electric current or power load curves and from these to estimate the amounts of steam used during various periods. Fig. 5 gives the ideal water rate for engines or turbines working under different initial pressure and back pressure or vacuum conditions, with corrections for superheat in the initial steam. Table 1 gives the factors by which ideal water rates may be multiplied to obtain average actual expected water rates for engines and turbines of various capacities when operating under full load conditions. Table 2 gives the factors by which the actual water rates under full load operating conditions should be multiplied to obtain actual expected water rates under various load conditions. From the load curves and these tables it is a simple matter to develop curves showing the steam required by the electric generating or power units.

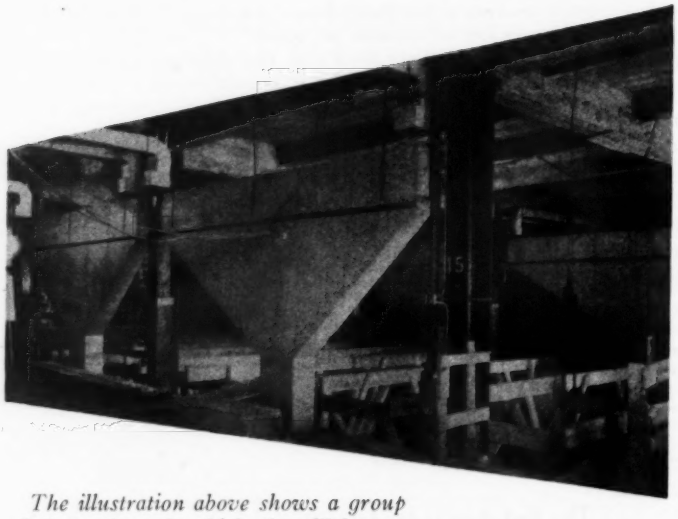
The next step is to determine the amount of heat available in this steam for heating, etc., after it has passed through the generating units. This can be done by deducting the heat transferred into work, plus that lost by radiation from the heat in the steam entering the generating units. Since 2,546 Btu per hour = one horsepower hour and 3,415 Btu per hour = one kilowatt hour the heat extracted in performing work per pound of steam used may be obtained by dividing these figures by the water rates of the units per indicated horsepower hour or per kilowatt hour, respectively, of work done by the steam. From 1 per cent to 2 per cent may be deducted for radiation and other heat losses, depending upon the size of unit.

Example. A 200 kilowatt turbine is operating on saturated steam at 150 lb. gage pressure and consuming 40 lb. of steam per kilowatt hour delivered, at full load. Determine the heat available in the exhaust for heating.

Solution. The mechanical efficiency of the turbine is 0.935 and the efficiency of the generator is 0.934 (See Table 1), giving a combined efficiency of $0.935 \times 0.934 = 0.873$ which would mean

(Continued on Page 141)

Picturizing Essential



The illustration above shows a group of ducts through which air will be exhausted from the ceiling of one of the entrance corridors of the Empire State building, New York City.

There are five main entrances to the building. As the indraft through entrances and up elevator shafts due to the flue action in a building of this height is so great it would be impossible to properly heat the entrances with direct radiation.

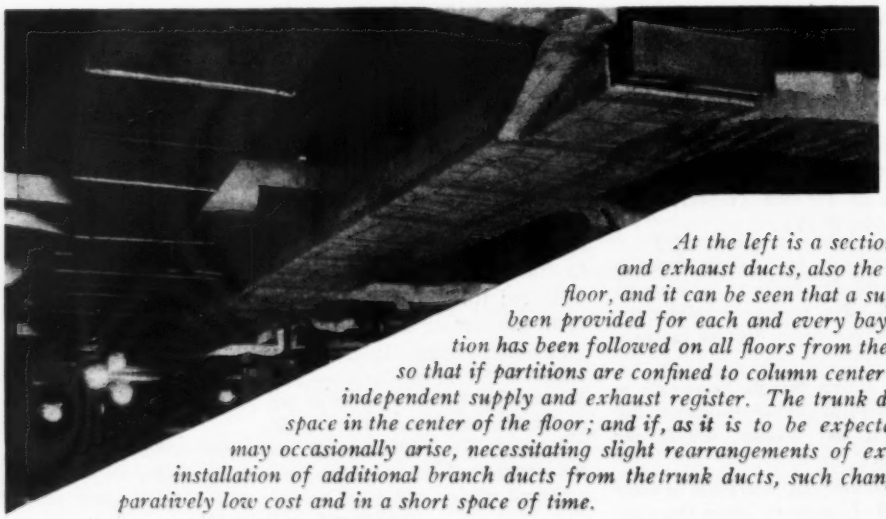
An independent recirculating hot blast system has been installed for each entrance, the air being drawn by a fan from the corridor ceilings and after passing over tempering stacks is discharged into the vestibules and corridors through registers located near the floor. Provision has also been made so that the fans can draw air from the outdoors instead of from the corridors in case it is found desirable at times to create a pressure in the entrances in order to counteract the indraft when, due to low outside temperatures, the indraft is excessive.

For Ventilation

Below is shown a small part of some of the trunk ducts on the fifth floor ceiling of the Empire State building.

The supply air is filtered and tempered during the heating season by being passed over thermostatically controlled stacks. The fan motors are all of the variable speed type so that the volumes of air supplied and exhausted can be varied according to the requirements.

The total volume in cubic feet per minute of air supplied and exhausted for the first to fifth floors is so great (approximately 300,000 c.f.m. each) that it was necessary to split it up into several systems in order to use fans of a reasonable size and to allow greater flexibility of operation.



At the left is a section of the main trunk supply and exhaust ducts, also the branch ducts on the fourth floor, and it can be seen that a supply and exhaust outlet has been provided for each and every bay. This method of distribution has been followed on all floors from the first to the fifth, inclusive, so that if partitions are confined to column center lines each bay will have its independent supply and exhaust register. The trunk ducts run around the utility space in the center of the floor; and if, as it is to be expected, partition arrangements may occasionally arise, necessitating slight rearrangements of existing branch ducts or the installation of additional branch ducts from the trunk ducts, such changes can be made at a comparatively low cost and in a short space of time.

Service Equipment for a Modern Building

Above is a view in the steam meter room in the sub-basement of the Empire State building, New York City.

Steam is supplied to the building at about 125 lb. pressure from the street mains of the steam company on the 33rd Street side of the building, there being two entirely independent entering lines taken from a loop system in the street mains, thus providing ample protection against a serious breakdown.

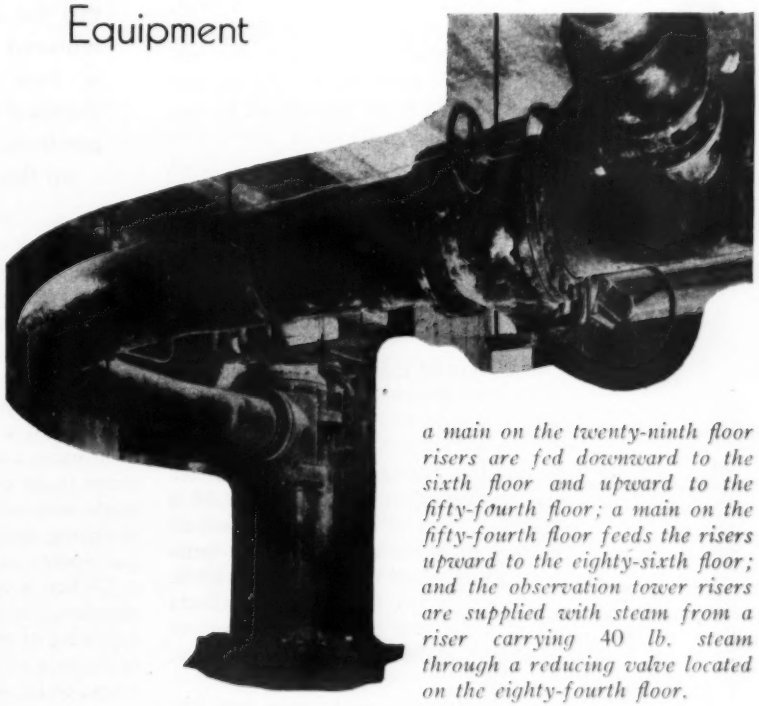
The reducing valves seen in the cut are those supplied by the steam company, a partial reduction in the pressure being made through these valves, the final reduction being made through reducing valves installed under the heating contract.

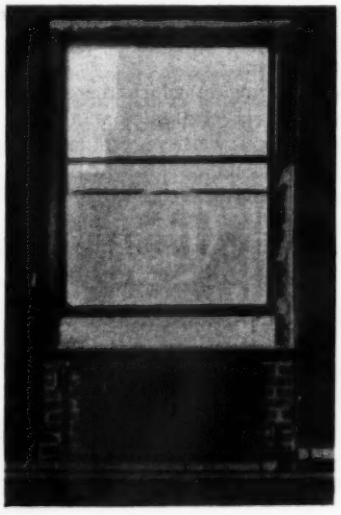
The righthand group of meters and reducing valves serve the direct heating system.

Heating Equipment

Below the photograph shows the base of the 24-in. low pressure steam supply riser in the sub-basement, which supplies steam to the direct heating system from the fifth floor to the top of the building; also the base of the 12-in. low pressure steam supply riser for the air tempering system.

The main building is 86 stories in height and on top of this there is an observation tower 200 ft. high, making the total height of the building approximately 1,200 ft. above the street. With a building of this great height it would be impracticable to employ one set of risers per bay for the full height of the building. The heating system was therefore divided into five vertical zones. A steam main on the sub-basement supplies all risers up to the fifth floor; from a main on the twenty-ninth floor risers are fed downward to the sixth floor and upward to the fifty-fourth floor; a main on the fifty-fourth floor feeds the risers upward to the eighty-sixth floor; and the observation tower risers are supplied with steam from a riser carrying 40 lb. steam through a reducing valve located on the eighty-fourth floor.





The illustration to the left shows a typical radiator with its run-outs. The building will be heated by a two-pipe vacuum return system with four steam turbine driven vacuum return pumps so cross connected that any one or more pumps can be operated, the number in operation depending upon the condensation load at the time. Each pump has a rated capacity of 100,000 sq. ft. (equivalent direct radiation) and three pumps have sufficient capacity for the direct heating load, air tempering load and also the load from the medium pressure steam system from the kitchens and hot water generators. There is an electrically driven vacuum pump unit which will be used during the summer for the kitchen and hot water generator condensate.

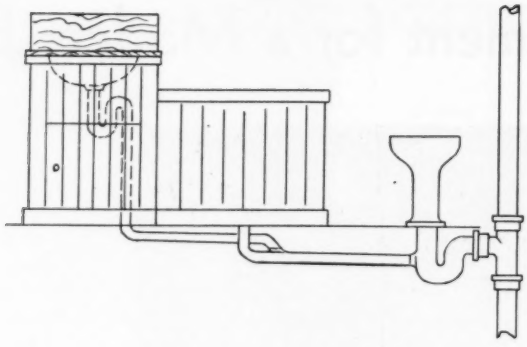


Fig. 1.—A typical old-fashioned installation such as may be encountered in promoting remodeling work

Rules for New and Old Work —Shall they be the Same?

For purposes of illustration, it is assumed that the fixtures shown in Fig. 1 are to be replaced with modern ones. The question is, how much of the piping should be changed to conform to modern codes and practices. S. M. Barr tells of a discussion on this subject and suggests a solution.

AT A convention of plumbing inspectors the subject of this article came up for discussion—not, however, on the formal program, but in a group of delegates who seemed especially interested in the correct carrying on of the work of their offices. The attitude of individual inspectors seemed to be determined by two principal considerations—by the qualities of fairness in the man himself, and by the general attitude toward good plumbing of the public in the several communities.

It is very clear that an extreme position regarding replacements of obsolete or insanitary work can be made either very unjust to the owner or result in the indefinite continuance of bad plumbing conditions.

To us a middle ground on this subject is the wiser course.

There are those who contend that when old plumbing is to be replaced with new, the entire remodelled installation shall be handled exactly as if it were new work. Possibly the work is so old that it dates back to a time when venting was not the custom. Generally, under such conditions the running of new vents would be a very expensive proposition, and often almost a practical impossibility. We know of an instance where the venting of a replaced lavatory involved the running of 50 ft. of 1¼-in. vent pipe, including two flat horizontal offsets of 10 ft. and 15 ft. On the face of it, such a requirement was absolutely unjust, and failed of the service that it was expected to render.

What can be done to protect the owner from such obviously unjust requirements and at the same time to insure the inmates against insanitary conditions?

Can the plumbing inspector let down in his requirements for replacements in one case because the owner is poor, and enforce complete requirements in the case of an owner known to be able to stand the expense?

In the case of new work, these questions do not arise —every owner is on the same footing—but in the case of replacements it is different.

In some communities the situation is covered by enforcing a rigid ordinance compelling the same treatment for replacements as for new work.

Such an ordinance is the following:

"All plumbing or house drainage work done to replace any that may be condemned by the board of health or plumbing inspector, shall be considered as new work, and constructed in conformity with the requirements of this ordinance, and no person or persons shall connect or cause to be connected any plumbing or house drainage work with any cesspool or public sewer unless the said plumbing and house drainage work conforms to the requirements of this ordinance.

"When a house or building in which there is house plumbing, is moved from one location to another, or in repairing or replacing the soil, waste or ventilating pipes or fixtures of a plumbing system, the pipes or fixtures are found to be of a material not allowed by this ordinance, or are improperly installed or defective, they may be ordered removed by the chief plumbing inspector, and when replaced must comply with the requirements of this ordinance."

It seems to us that a very fair position is held by the plumbing authorities in the enforcing of such an ordinance as the following:

"When an old or defective fixture is removed, to be replaced by a new one, and no other fixture or piping is to be added or remodeled, it will not be necessary to reconstruct the soil, waste or vent piping to make it con-

form to this code, unless the same is in a defective condition. In such case, if found necessary, the fixtures shall be provided with efficient deep-seal traps or deep-seal non-siphon traps.

"When old or defective plumbing is to be remodeled, additional fixtures installed or the whole plumbing system moved to another part of the building, then the remodelled system shall be made to conform reasonably to this code."

We believe the foregoing covers the replacement situation in a very fair manner. To be sure, such ordinances place considerable power in the hands of the plumbing inspector, and if he does not deal justly and with consideration, a difficult situation may be forced upon the owner. In this event, it seems fair that the owner should have the opportunity of appealing to a

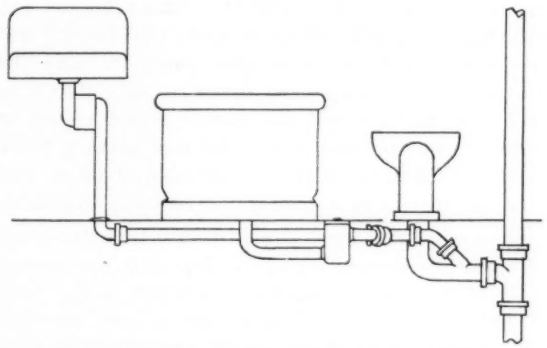


Fig. 2.—In the remodeling job considered, it might be a very difficult and expensive proposition to make the work a full-vented installation. In that case, this layout is suggested

higher authority than the plumbing inspector. In a very few cases such right of appeal is provided for.

The city of Portland, Ore., has a board of appeal to which questions in dispute may be referred. This body consists of three members, appointed by the mayor, two of whom must have a competent knowledge of plumbing. The usefulness of this board of appeal may be seen from the following section of the Portland plumbing code:

"Any applicant for a plumbing permit whose application shall have been rejected by the bureau of buildings, or any person who shall have been ordered by said bureau to incur an expense in the alteration, repair or construction of a plumbing installation, may, within fifteen days thereafter, appeal from such action by serving upon the bureau notice in writing of such appeal, and such notice, or a certified copy thereof, shall be at once transmitted to the board of appeal. After notice to such parties as the board may direct, a hearing shall be had, and the board may, by a majority vote, affirm, annul or modify said action of the bureau. The decision of the board thereupon shall be in full force and effect."

Other sections concern the workings of the board of appeals, but these are not necessary to this discussion.

In one of the ordinances already quoted, the use of unvented deep-seal or non-siphon traps is allowed in replacements. This should not be done, of course, when the obvious thing to do is to vent the replaced fixture. However, some freedom in the use of non-siphon traps under difficult venting conditions is one of the possible solutions for many replacement jobs. For instance, suppose the three old-fashioned bathroom fixtures in Fig. 1 are to be replaced with modern fixtures. Naturally, the plumbing connections, in addition to the fixtures, need to be replaced with something better. However, instead of demanding that the entire job be replaced with an entirely modern installation, regardless of all considerations that might surround the case, our idea would be to make the replacement work entirely safe from a sanitary standpoint. but to do so with the least burden to the owner. We believe if such a policy were to be carried out, that often owners would be much more anxious to replace old plumbing with new.

In the remodelling job we are just considering, it might be a very difficult and expensive proposition to make the work of a full-vented installation. In that case, why not install the new work something after the manner of Fig. 2, using an approved non-siphon trap for the lavatory, a drum trap for the bath tub, and a bend with side inlet for the water closet?

Not all will agree that our attitude on such a job as this is the best one, and we acknowledge that there are arguments in favor of the enforcement of iron-clad ordinances compelling the installation of replacements on exactly the same basis as new work.

On replacement work more than on new work, owners are found doing their own work. As the owner unquestionably has certain rights which cannot be invaded, this situation is best handled by such a regulation as the following:

"All plumbing installed by the owner shall comply with the full requirements of this code, and in such event the word 'owner' shall be substituted for the word 'plumber' throughout this code."

Such a requirement enforced, either produces a correct piece of plumbing on the part of the owner, or compels him to put the work into the hands of those who are qualified.

The matter of tests also enters into the subject of plumbing replacements, and on this phase of the subject, the following is a good requirement:

"The smoke test shall be used in testing the sanitary condition of the drainage or plumbing system of all buildings where there is reason to believe that it has become defective. In buildings condemned by the proper administrative authorities because of insanitary conditions of the plumbing system, the alterations in such system shall not be considered as repairs, but as new plumbing."

◆

"Linking up reading and action—that is the efficient way to read. Lord Kelvin bought a book on Heat, by a French scientist—Fourier—and it changed his whole life and led to many of his great discoveries. Faraday bought a book on Chemistry and became the founder of the present Electrical Age. Westinghouse bought an English magazine and found an article on compressed air that gave him the idea of his air-brake that is now used in all the railways of the world. The man who does not read, in these days of quick changes and irresistible progress, drops behind and becomes an obsolete and insignificant unit in his trade. Reading is a ladder. You MUST read if you want to climb."

—Herbert N. Casson.

Editorials

This Is Interesting!

DO you remember the (now) old-fashioned oratory in which the speaker charged the contractor with—well, to be mild about it, with not being a merchandiser? One of the results of that criticism was that manufacturers of some products went outside the industry for outlets.

Take the stoker, for example. It was to be pushed through the coal dealer. Which makes the following remarks, from a man in that field, extremely interesting: ". . . the coal man is going to sit in a stuffy office, cigar butt in mouth, chair tilted back, heels comfortably on a dirty, oak desk, waiting for the phone to ring to send half a carload to the shoe factory—unless So-And-So gets the order this time." The burden of this complaint is that no one in the coal industry is, according to this writer, doing what should be done to merchandise the stoker—which seems to be held in the light of the one thing needed to save the coal industry.

How familiar those remarks about the coal dealer are! They might have been uttered by some one in the old days about the contractor in our own industry. But it is always dangerous to paint a picture in one color. The truth isn't quite so simple. What happens, evidently, is that the fact that there are retailers in every line of business who do not show enthusiasm for selling, is allowed to blot out the existence of the many who do and who will.

The difficulty here is that there is a failure to realize that the man who is selling fuel is primarily interested in fuel—not in stokers. While the man who is interested in furnishing efficient heat—the plumbing and heating contractor—is trained to think in terms of plant, not fuel. It may be that the stoker will save the coal dealer in his competition with gas and oil as fuels—but who will save the stoker industry from the mistakes previously made by the oil burner people in going outside the ranks of trained heating men? It's a vital question to the stoker people.

How vital it is may be judged from the drag, which a poorly-conceived merchandising start on the part of the oil burner industry has been. Public prejudice against the oil burner was very largely increased by incompetent selling and installation.

After all, it does seem that it would be worth while to take a little time to sell those contractors who have put heating plants into millions of homes. Even granting that it might take a bit of time to get the group in motion—what irresistible motion it would be!

When Low Is Too Low

A PROMINENT English business man who is the head of one of the largest British organizations, is quoted as saying recently: "I am not sure that every commodity today has not some kind of a basic value below which consumption is not necessarily increased at all."

Economists have discussed for centuries the meaning of the word value, but it is to be doubted that their learned language, and the changes given to it by each generation, will do much to clarify the matter. Value shifts with the circumstances. A man may want something so badly that he will pay any price for it, while another can't see why the first even bothers his head about it. A collector of books or paintings will pay thousands for a book or portrait; another man will think him nothing but a fool. To him, the book is nothing but paper and printing, the portrait nothing but canvass and paint.

It isn't until we get down to such homely examples that it becomes perfectly clear that the science of economics is an attempt to account, in the form of figures, for purely human habits and vagaries. The English gentleman quoted above has put his finger on one of the human vagaries that account, perhaps, for much of our difficulties in the building industry.

Perhaps price-cutting in the building business is responsible for the absence of a quicker pick-up in total volume. We are not attempting, of course, to explain the whole situation in this way. But it is possible that among the factors that must be cleared away there is a lingering feeling in the public mind that all the haggling that has gone on about price has, somehow, not done it very much good after all. Increased building is going to be brought about, not merely by decreased prices, but by increased confidence.

The inevitable result of price-cutting is distrust and suspicion, unless the lower prices can be shown to have grown out of a more efficient operation. And it would be difficult to sum up more accurately the state of mind about the building industry both within and without its confines.

Something must be done for the entire building industry to match what individual contractors in our own field are doing to maintain profitable volume. They are building consumer confidence in themselves. No doubt confidence is one of the factors for which the public is willing to pay, and the "basic value" of a commodity cannot be figured alone by the time and material that go to its making. When we get below that price, we sacrifice something—with the likelihood that that something is confidence.

PLUMBING & HEATING MERCHANDISING

SIGNS OF MERCHANDISING

To the demand for more and better merchandising, the plumbing and heating contractor is responding, in many and various ways — as the pages that follow will show. It is safe to say that today there stretches across the country a closely linked chain of plumbing and heating establishments, growing steadily in number and in the skill with which plumbing and heating service is being presented — with a real sales punch

Signs that "Electrify"; Selling Hot Water Service With a Hot Water Faucet; Selling — by Cable!; Trucks That Are Moving Billboards; A Window Display That Gives Five Reasons for Buying

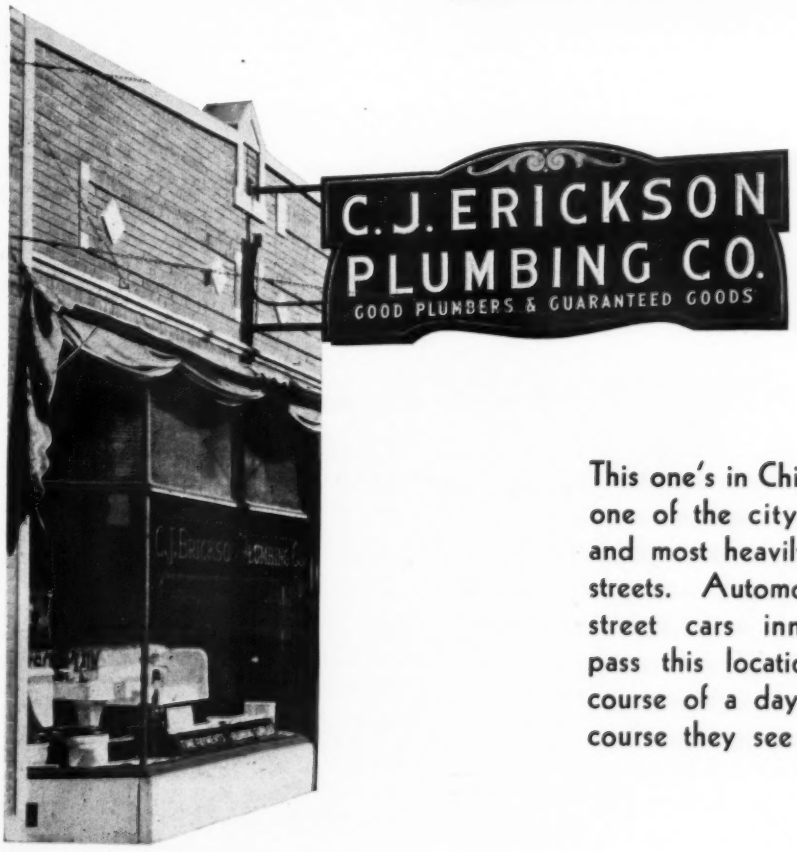
Some "Electrifying"

This sign has a commanding way about it in Louisville—it belongs to a firm that knows what's what in putting over the "Heat By Radiator" idea. You can't miss it.

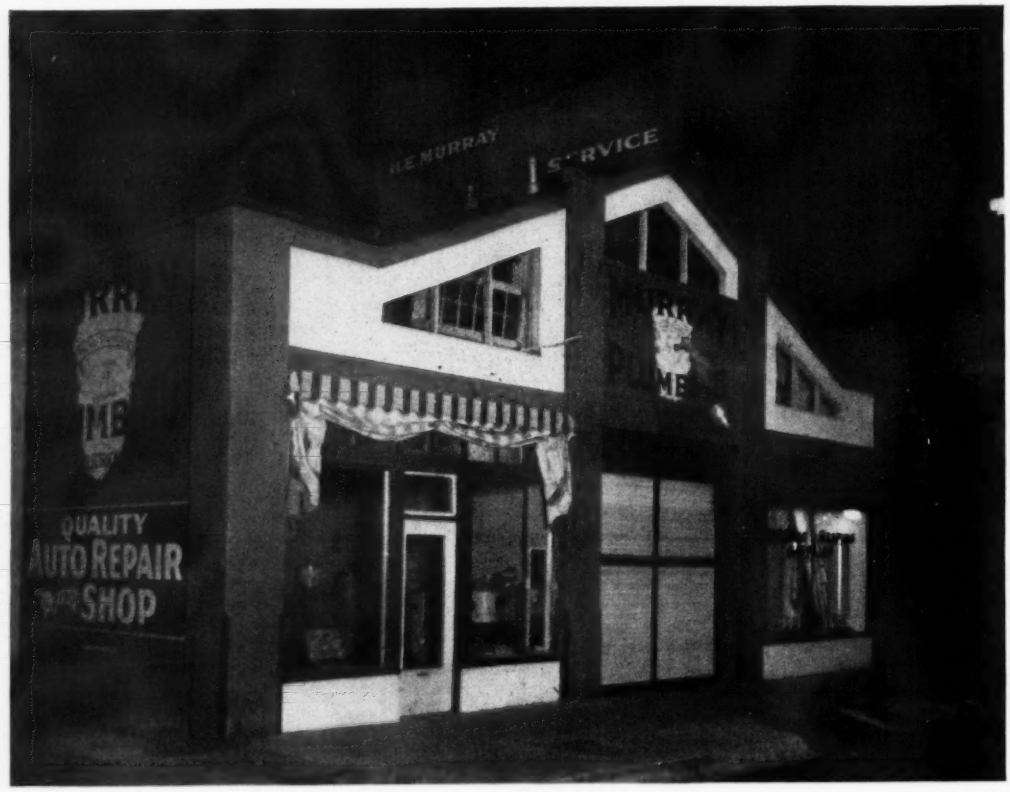
And this sign of Durant's in California, says our reporter, commands the attention day and night of a boulevard which carries upwards of 50,000 vehicles daily. That's circulation!

Signs

At the right we see the Stilwell sign that lights the way to plumbing and heating comfort to a community in Philadelphia. Neat, conservative—yet effective.



This one's in Chicago—on one of the city's longest and most heavily traveled streets. Automobiles and street cars innumerable pass this location in the course of a day—and of course they see the sign!



Showing the faucet in operation at night

Selling Hot Water Service With a Hot Water Faucet

The faucet on the front of a store used to be the sign of a plumbing shop. Here's a modern variation of that idea that meets modern merchandising demands

ACTION in advertising is recognized as the best method for getting results out of signs. As witness of the long step the plumbing industry has taken in advertising from the old water heater boiler that used to be set outside most plumbing shops as a sign of the trade, H. E. Murray, South Vermont Avenue, Los Angeles, has built one of the most unique and satisfactory action signs to be found in Los Angeles. The sign has proven so satisfactory in getting results that Mr. Murray has incorporated it as a trade mark and uses it on his cards, construction signs and other places where his name is used.

The sign is nothing more than a

huge water faucet projecting from the front of the plumbing shop up near the top of the building. Out of the faucet a steady cloud of steam drifts out into the open air. Occasionally a drop of water falls from the faucet and is caught in a small guttering placed for the purpose to prevent it falling on passing pedestrians. At night a flood light casts a glow on the drifting steam so that no one passing up or down the crowded street can miss seeing and noticing it.

The completion of a street widening program on Vermont last fall has made it one of the busiest cross-town arteries of the city. The steaming faucet has become so familiar that the passing of a card with the name of the shop imposed on a picture of the faucet immediately informs the client of the location of the shop, according to Mr. Murray.

A Valuable Trademark

"The picture of a steaming faucet has been placed on all of our trucks, construction signs and other material used in the daily routine of business," said Mr. Murray. "Originally the idea was worked out in my spare time from old pipe and material that had been discarded. We used the sign as a novelty but found soon that people were designating the location of the shop by referring to the steaming faucet. I found that people could remember a mark like that much better than an address or a building as a landmark. Observing the effect of the idea we placed flood lights for use at night and the immediate result was so apparent that we adopted the sign of the steaming faucet as our mark of good plumbing."

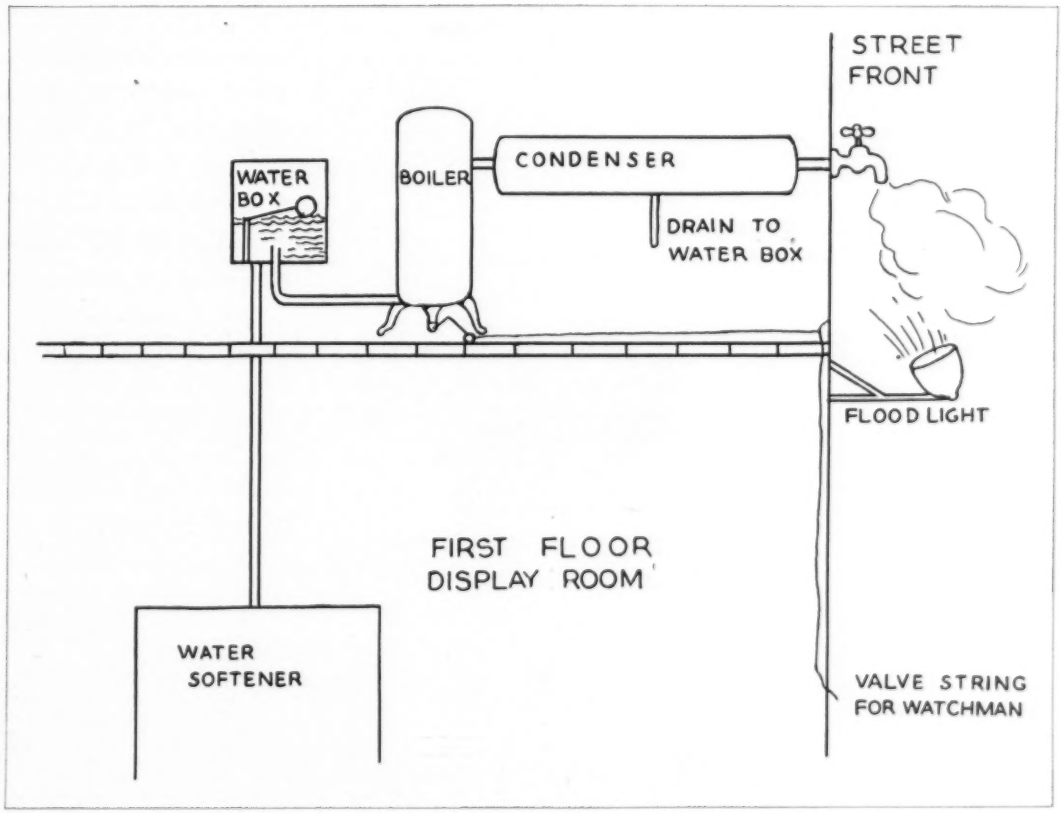
The apparatus is very simple to construct, according to Mr. Murray. All that is needed is an old water heater, a water closet box for keeping the water at a certain level in the boiler, a small boiler for use as a condenser to remove as much water from the line to the faucet as possible, a faucet, and several lengths of pipe. The construction or set up of the idea can be gained from a study of the plan in the accompanying picture.

"We placed a night switch on the gas flame under the water heater," he said, "so that the night watchman who makes the rounds in this district can turn it off after midnight. This consists of a light rod attached to a valve on the gas line and runs down the side of the door facing to within easy reach from the sidewalk. The first job of the boy opening the shop in the morning is to light the water heater under the sign.

"We have gone a little farther than this and hooked up a water softener that we have in our display rooms, to the water pipe leading to the sign. This not only saves us the labor of cleaning the pipes in the heater but also furnishes us a practical demonstration. Sometimes a little idea like this is worth a great deal to a merchant and is well worth fooling with.

"Our steaming faucet demonstrates the fact that people notice action and the unusual in advertising," he continued. "When we give our card with the steaming faucet picture on it, or when one sees that we have charge of the plumbing in an apartment house the sight of the picture immediately brings to mind the location and appearance of our place. That after all is the main thing in advertising, keeping one's name in the public mind."

Below is working drawing for the advertising faucet



Selling — by Cable!

THIS is a very modest story—but it contains a highly profitable lesson in alertness in selling. Carl Lipp of C. M. Lipp & Son, 1412 Que St., N.W., Washington, D. C., outlines something of their selling methods briefly and, certainly, modestly.

"Among our customers are a great number who travel or live abroad over long periods and it is inevitable that during the time that some are away they will find it convenient to rent their homes. These have to be kept in repair for the tenants.

They Recommend Modernization

"It is our policy to advocate the installation of modern appliances whenever we find the opportunity, and when the antiquated water heater in any home breaks down we feel an opportunity has been created for us. This applies equally to heating apparatus, other gas appliances, and plumbing fixtures.

"Whenever the condition as outlined in the preceding paragraph occurs in the home of a customer who is out of the United States we merely use the quickest method possible to reach them in order to tell them our story. In our opinion this is good business and in our case has justified our policy. We do just this same thing when our customer is right here with us, so why not when he is away.

"We use the sales helps that manufacturers give, and in the case of automatic gas water heaters this has been considerable.

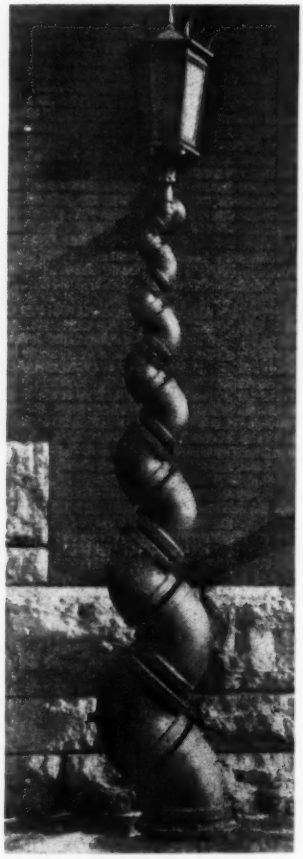
"Our men are trained to report immediately to the office any job that should be taken up with the owner.

"We use intelligence in going to expense in these matters however because the owner must bear the cost and we have no right to needlessly burden him; therefore we only use these quicker methods of communication where the chances are much in favor of our getting the job we recommend.

Three Unusual Sales

Three such sales, for example, were unusual in that they occurred within a week. The owners were in widely separated parts of the world: Switzerland, Hawaii and China. One sale was a one hundred-gallon storage heater with a one hundred-gallon tank, involving approximately $600. Another was an instantaneous, and the third a storage heater.

"Recently we have closed an oil burner installation involving $800, the owner being in China. The deal was made by radio. Also a new hot water heating boiler amounting to $1,500, the owner being in Germany. This deal was closed by cable.



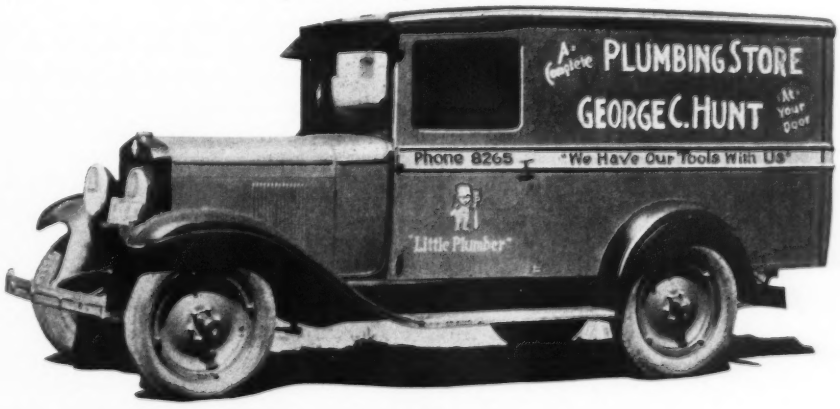
This unusual lamp post, which is made from fittings, stands in front of the St. Louis, Mo., branch of Crane Co., at 30 South 16th Street. The picture was sent us by R. Dorste, assistant manager of the branch

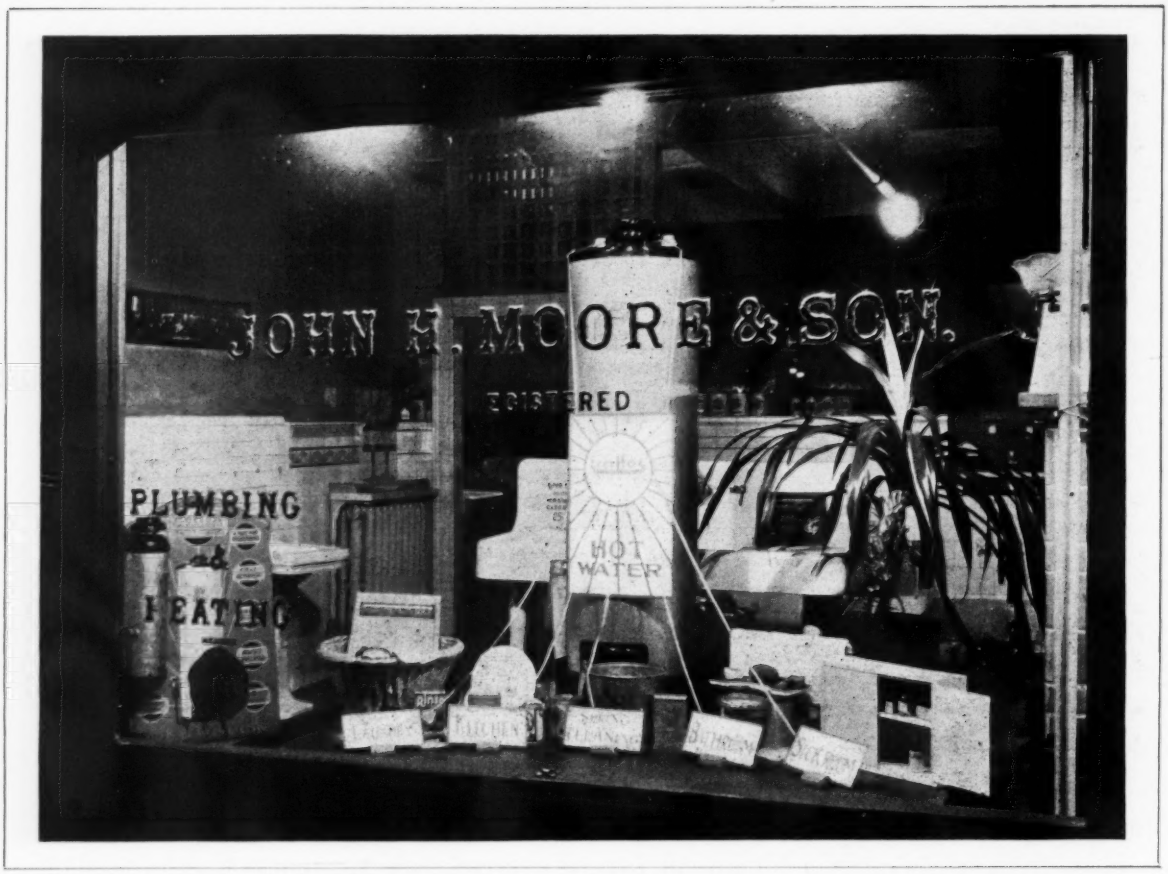
"We have made it our aim to give sincere, smiling service at all times to all of our customers. This has paid us a profit in dollars and repeat orders. The dollars without the repeat orders would not bring the results we want."

The point of all this, of course, is the fact that when it becomes apparent that a customer ought to have a more modern piece of equipment in his home, the fact that he happens to be on the other side of the earth doesn't stop the Lipp organization. If he needs it, and they feel that he can be convinced of that by long-distance methods—radio, or cable, or otherwise—they go to work at once.

Trucks That Are Moving Billboards

SOME plumbing and heating repair trucks are plumbing and heating repair trucks. Others are billboards. The difference is made plain by the two photographs on this page. The one above shows on its panel the complete piping job for a residence—might be made the basis of a sales talk. The one below tells its story of complete service brought to the door, and tells it briefly and pleasingly to inhabitants of Huron, S. D., where George C. Hunt used this photograph as a postal card to mail to his customers.





This Window Gives Five Good Reasons for the Purchase of Hot Water Convenience

The photograph above has been reproduced in as generous a size as possible in order that those of our readers who are "display window conscious" may see it in detail and make use of it if they are so disposed. A water heater, with a wash basket and board, some dishes, a scrub pail, a bathroom scale and a medicine cabinet—these, a few streamers and some simple window cards, make up a window display that shows five uses for hot water as you pass, so to speak. Because the passerby will find himself or herself remembering that window, even though no particular notice may have been taken of it at the moment. One look—and the home owner will know five reasons for having a modern water heater.

Best Oil Burner Practices Contained in Minneapolis Ordinance

By C. H. CHALMERS

Here is an outline of good practice which anyone installing oil burners should follow regardless of whether or not he works under a code. In other words, each individual should adopt these standards as his own in assuring satisfactory installations. According to a report of the American Oil Burner Association, 39 cities have adopted provisions similar to these.

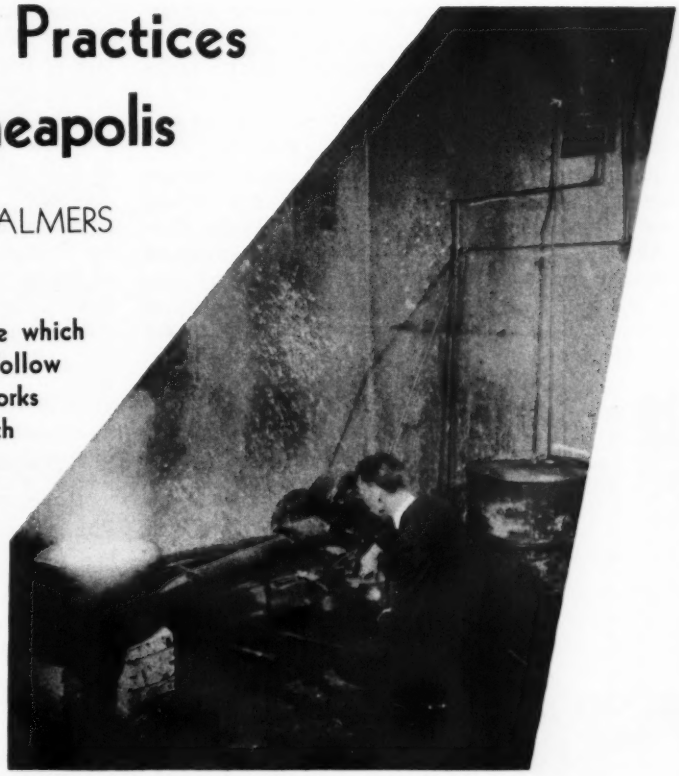


Fig. 1—Minneapolis approves for installation, any oil burner listed by the Underwriters' Laboratory or any other nationally recognized inspection board of laboratory. This shows an Underwriters' oil burner test set up six years ago

THE new ordinance regulating the construction and installation of oil burning devices, etc., for the city of Minneapolis was approved on January 30 of this year. It permits 550 gallons to be installed in open tankage when put in two tanks of not over 275 gallons each and connected with a three-way valve to the burner. Thus, only one tank is permitted to discharge at a time.

Possibly the most outstanding thing in the new Minneapolis ordinance is the fact that the city has adopted the United States government standard specification for grades of oil and has made it a penal offense to supply oil other than that specified by the owner.

Much confusion has heretofore existed in the matter of protecting boiler and furnace rooms. The new ordinance clarifies the situation and we believe provides a reasonable regulation.

Another interesting thing is that the new ordinance provides that a chimney flue connected to an oil burner furnace shall be used for no other purpose.

The Minneapolis oil burner industry feels that it has in this new ordinance the most up-to-date thing of its kind in existence.

The term, "Oil Heating Equipment," is taken to mean and include all equipment or appurtenances connected to and contributing to the operation of an oil burner, as such, and located within the same building, including internal and external supply or storage tanks and provisions for filling and venting same, piping, wiring and all accessories.

Installation of Storage Tanks for Oil Fuel

The Minneapolis code provides that tanks shall be constructed of galvanized steel, open hearth steel or wrought iron of a minimum gauge (U. S. Standard) depending on the capacity as given in the table which follows:

1	to 285	gallons	16 gauge
286	to 560	gallons	14 gauge
561	to 1,100	gallons	12 gauge
1,101	to 4,000	gallons	7 gauge
4,001	to 12,000	gallons	1/4 inch
12,001	to 20,000	gallons	5/16 inch
20,001	to 30,000	gallons	3/8 inch

For tanks of 1,100 gallons and more, a tolerance of 10 per cent in capacity may be allowed.

All connections are required to be made through the top of the tank above the liquid level, except in tanks having a capacity of 275 gallons and less where one connection may be made, not larger than 1 in. iron pipe size, in the bottom of the tank. Unenclosed inside storage or gravity tanks of 275 gallons capacity and less may be provided with an additional 1-in. opening in the bottom of the tank for an approved key stem valve to aid in the cleaning of the tanks.

Underground tanks shall be thoroughly coated on the outside with tar, asphaltum, or other suitable rust-resisting material, dependent upon the condition of the soil in which they are placed.

Inside storage, gravity, and auxiliary pressure tanks, not enclosed in masonry or concrete, shall be provided with securely attached substantial incombustible supports, and be securely bolted to basement floor or otherwise secured to avoid strains on piping, and shall not be located within 10 ft., measured horizontally, from any fire or source of flame, unless an

incombustible barrier is interposed providing equivalent protection.

The aggregate capacity of exposed storage tanks installed in any domestic cellar or basement shall not exceed 550 gallons. The maximum capacity of any one exposed tank shall not exceed 275 gallons.

Storage tanks of over 275 gallons capacity and not exceeding 550 gallons shall be placed in an enclosure of inside dimensions 6 in. greater on all sides than the outside dimensions of the tank. The walls of the enclosure shall be constructed of reinforced concrete not less than 6 in. in thickness or of 8 in. of masonry. The walls shall be properly bonded to the floor and carried up to a height of not less than 1 ft. above the tank and the space between the tank and the walls and the top of the enclosure shall be completely filled with sand or well tamped earth. For such tanks of over 550 gallons capacity, which shall not, except as hereinafter provided for, exceed a gross capacity of 5,000 gallons in buildings of "ordinary" construction nor 10,000 gallons in buildings of fire-proof construction, the walls of the enclosure shall be constructed of reinforced concrete not less than 8 in. in thickness or of masonry not less than 12 in. in. thickness. Such walls shall be bonded to the floor and carried to a height of not less than 1 ft. above the tank and the space between the tank and the walls and roof of the enclosure shall be filled with sand or well tamped earth. Provided, however, that in any building, if located in a fire resistive room cut off vertically and horiontally, in an approved manner, from other portions of the building, the gross capacity of such tanks may be greater than as above provided for, but in no case in excess of 50,000 gallons, with an individual tank capacity of not to exceed 25,000 gallons, provided the insulating sand or earth is increased, in each such case, to 12 in. on the sides and 18 in. on the top. Each such enclosure, irrespective of the size of the tank enclosed, shall be tightly roofed over with a slab of reinforced concrete with a safe carrying capacity of not less than 250 pounds per square foot and not less than 4 in. in thickness, or with other fire resistive construction of equivalent strength.

When located underneath a building, tanks used for such storage of fuel oil shall be buried with top of tanks not less than 18 in. below the level of the floor. The floor immediately above each such tank shall be of reinforced concrete at least 6 in. in thickness, capable of withstanding a uniformly distributed load of 250 pounds per square foot, or some other type of construction of equivalent strength and fire resistance, extending at least 1 ft. beyond the outline of tanks in all directions, and provided with ample means of support independent of any tank.

Tanks of 275 gallons capacity and less may be used to supply oil to the burner by gravity, provided that there is a suitable automatic safeguard to prevent abnormal discharge of oil at the burner.

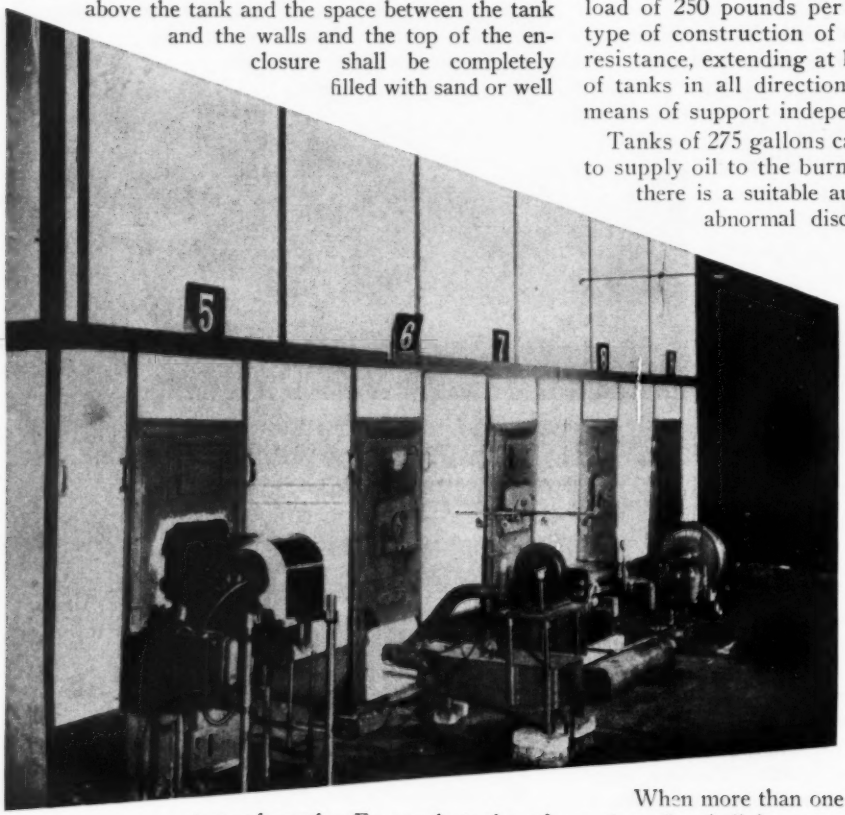


Fig. 2—In contrast to the methods of several years ago illustrated in Fig. 1, this view of a part of the 1930 oil burner test equipment of the Underwriters' Laboratories is shown

When more than one such gravity tank is installed, such tanks shall be connected with the main pipe line leading to the burner, through a manually-operated approved three-way valve, so that not more than one tank can in any way discharge its contents at one time.

Tanks of 60 gallons capacity and less may be used under pressure, provided they shall be designed for six times the maximum working pressure, which maximum working pressure shall not exceed 50 pounds per square inch. Such tanks shall be proved tight at twice such maximum working pressure. Pressure tanks shall be equipped with a reliable pressure gauge and an automatic relief valve piped to discharge by gravity to the storage tank.

Tanks located outside of the building underground shall be so placed that the top of the tank is not less than 2 ft. below the surface of the ground, except that, in lieu of the 2 ft. cover, tank may be buried under 12 in. of earth and a cover of concrete at least 3 in. in thickness provided; reinforcement in such

concrete cover shall extend at least 12 in. on all sides of the tank.

Where tanks are located so that the top of the tank is above the level of the suction inlet of the pump supplying oil to the burner or burner assembly, a siphon-breaking device shall be installed.

No sand or earth shall be filled in around any newly installed tank, nor any oil run into any fuel oil storage tank, until such tank shall have been inspected and accepted by the Fire Prevention Bureau.

All storage tanks shall have an open or automatically operated vent pipe of ample size to prevent abnormal pressures in cases of fire or when filling. In no case shall any such vent pipe be less than (¼ in. iron pipe size, and on any such tank exceeding 1,500 gallons in capacity, the vent pipe shall be not smaller than the fill pipe.

The lower end of the vent pipe shall extend through the top of the tank for a distance of not more than 1 in.

The vent pipe shall extend from the tank to the outside air, terminating at a point outside of the building 2 ft. above the level of the cap on the fill pipe and preferably not less than 2 ft., measured vertically or horizontally from any window or other building opening. The outer end of the vent shall be provided with a return bend or a weather-proof hood.

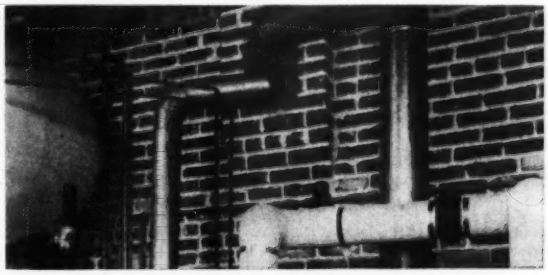


Fig. 3—Under the provisions of the new Minneapolis code, two flue connections into a single chimney serving an oil burner as shown here are not permitted

All filling pipes shall terminate outside of building and shall be provided with a metal cover or cap which shall be closed tight when not in use. It shall be unlawful to use a screwed or other tight connection on the fill pipe of an exposed domestic fuel oil tank for the purpose of filling said tank with oil. Where tanks are buried underground, such screwed or tight connections shall be permitted.

No oil tank used in connection with oil heating equipment shall be equipped with a glass gauge, or with any gauge the breaking of which will permit the oil to escape from the tank.

Test wells shall not be located within buildings. Test wells located outside of buildings shall be locked.

A scavenging line, installed in connection with a tank located within a building, may be used and shall terminate outside the building. It shall be capped oil tight when not in use.

In all piping systems proper allowance shall be made for expansion and contraction, jarring and vibration. Flexible metallic tubing may be used to reduce the effect of jarring and vibration.

All threaded joints shall be tight and shall be made up with litharge and glycerine, shellac or suitable pipe compound.

Installation of Oil Burners

Each oil burner shall be equipped with a device, mechanical or electrical, which will automatically prevent an abnormal flow of oil from the supply.

Each oil burner subject to automatic ignition shall be provided with a permanent automatic device, so designed that oil, upon being turned into the combustion chamber, will immediately become ignited or shut off. A hand operated gate valve shall be installed in all feed pipe lines as near tank as practicable.

Each oil burner used in connection with a hot water, steam, or vapor heating system, shall be equipped with an automatic device to reduce or extinguish the fire in event of undue pressure or overheating within the boiler or furnace.

No oil burner shall be installed in any boiler or heater unless said boiler or heater is connected with a chimney having sufficient draft at all times to insure the safe operation of the burner. A chimney flue connected to an oil burning boiler or furnace shall be used for no other purpose.

Pipe dampers shall be removed or locked in the desired position, and no damper closing off more than 80 per cent of the pipe area shall be allowed.

Ventilation

All boiler or furnace rooms shall be provided with adequate ventilation to secure continuous complete combustion.

Any woodwork, wooden lath and plaster partition or other combustible material within 3 ft. of the sides or back or 6 ft. from the front of the boiler shall be covered with plaster board not less than ¼ in. in thickness or with other incombustible material of at least equal insulation value. No combustible material shall be stored within 10 ft. of boiler door.

If the boiler room ceiling is less than 3 ft. above the highest clean-out opening of the boiler, that portion of said ceiling which is immediately over such boiler and extending a distance of 4 ft. beyond the sides and back and 8 ft. beyond the front thereof shall be constructed of plaster board covered with sheet metal, or of cement plaster on metal lath, or of other fire-resistive material of at least equal insulation value.

Smokepipes shall be located with minimum clearances to ceilings, partitions, etc., in accordance with the following table:

	Min. Clearance If Unprotected	Min. Clearance If Protected
Woodwork	24 in.	12 in.
Plaster on wood lath	18 in.	9 in.
Plaster on incombustible lath, on wooden beams or studs	9 in.	6 in.

The protection required by the above table shall consist of a sheet metal or equivalent covering placed at least 1 in. from the surface to be protected, extending the full length of the smokepipe and at least 12 in. beyond it on both sides.

These features should be observed in making all oil burner installations.

The Small Stoker

By T. A. MARSH

A brief but unusually pithy discussion of the posssibilities and problems of the small stoker market with its six million prospective buyers

THE American public is needlessly wasting one hundred million dollars annually in heating plants and plants with boilers of 200 horse-power or less. The major group in this field is the apartment house but it also embraces greenhouses, laundries, small manufacturing plants, stores, schools and churches. These plants cause most of the smoke in our larger cities.

These plants also are the group that are going steadily to oil and gas for fuel.

An unbiased analysis of the causes of this deplorable situation places the blame at the door of the engineering profession.

This is a strong indictment against the engineering fraternity but the fact remains that until approximately six years ago practically no engineering talent was concentrated on the problem of burning fuel in small boilers with real efficiency, smokelessness or convenience. This is in marked contrast to the eager attention that has been paid to the burning of fuel in large boilers such as are used in large industrial and public utility plants. In this field American engineers have achieved outstanding success and have produced combustion results closely approaching the theoretical maximum efficiency. It may be that the concentration of attention on the problems of the larger plants is one of the chief causes of neglect.

In many heating plants over half of the fuel burned is wasted as a result of their being hand-fired. When fuel is not completely burned, smoke and soot are produced, causing difficulty for the owner and dissatisfaction with the heating plant.

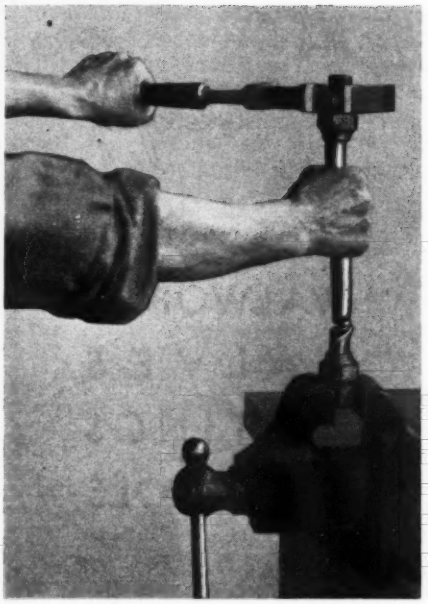
The advantages enjoyed for the past twenty-five years by the larger industrial and public utility plants made possible by experienced engineers trained in coal burning have resulted in high efficiencies with ability to burn low-priced coals—all resulting in reduced fuel bills, smokelessness and more satisfactory results as regards service from boilers.

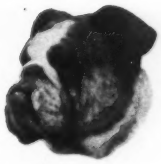
Let us face the facts of the situation of the smaller plants. These plants are normally hand-fired. The operating talent is usually quite inferior. As a result of these and possibly some other conditions fuel is burned more frequently at an efficiency of below 50 per cent than above. Speaking plainly, in many cases over half of the fuel is wasted. Naturally under such conditions the hundreds of thousands of chimneys of the heating plants contribute more than their share of smoke to the atmosphere of our cities.

It cannot be said that equipment was not available or that a knowledge of the method of installing such equipment was not known. One type of stoker now used in the heating plant is a type originally conceived and patented as far back as 1868. This type of stoker was well developed by the end of the past century and hundreds had been installed. These installations, however, were made for the most part in small and medium sized industrial plants with little or no attempt to serve the heating plant.

In order to overcome the smoke nuisance, the heating equipment must be inherently smokeless as education in this respect has been found to be futile. The automatic stoker eliminates the personal factor in the operation of domestic heating plants assuring uniform results.

The smoke departments of our various cities have given more attention to this problem than to any other problem confronting their office. This is evidenced by the very strict ordinances and inspection demands of our various cities. The high volatile coals of the Middle West have made the problem particularly acute in this region. The smoke departments of the City of Chicago and the City of St. Louis have lived up to the responsibilities entrusted





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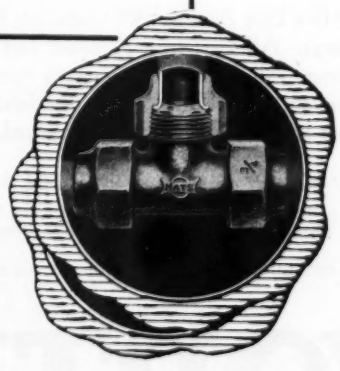

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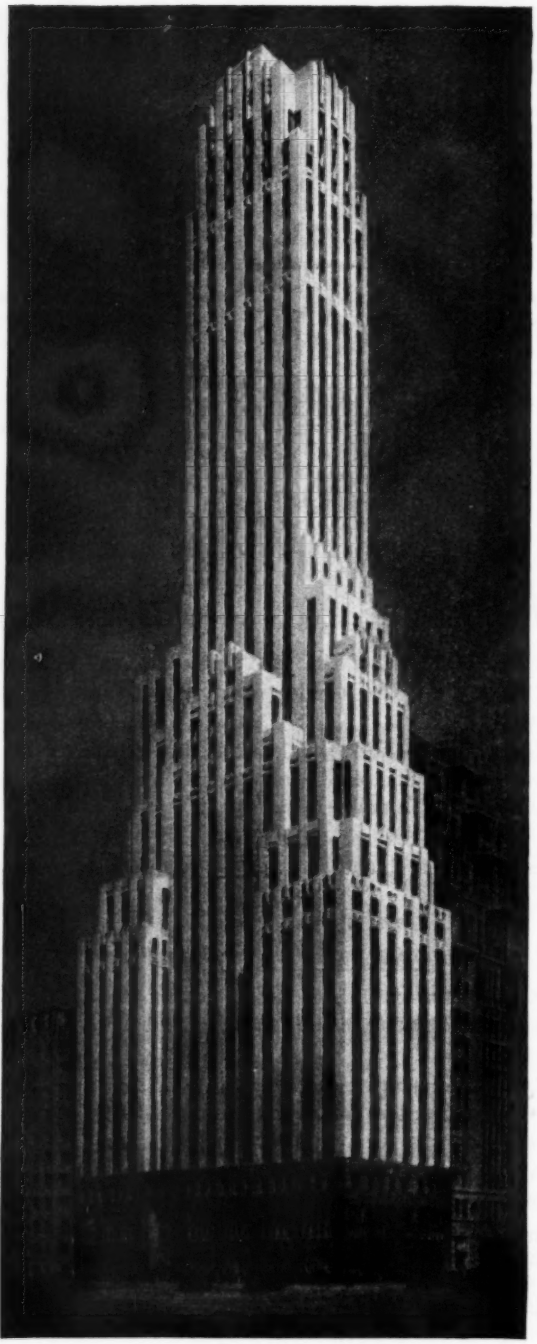
DOUBLE-SEAL CONNECTIONS



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to them and have enacted ordinances just as extremely rigid as could reasonably be enforced. Actual results, however, have been almost negligible because of the very nature of hand firing. Educational campaigns have been organized and vigorously conducted but unsupported by proper fuel burning equipment, the education of firemen and janitors can be of only slight value.

In retrospect it appears so entirely logical that the same basic principles used for the efficient burning of lower-priced coals and eliminating smoke that were successful in the larger plants must be applied to the smaller plants if similar results are to be obtained. Just why engineers neglected to give their attention to this problem and to apply existing knowledge is a question that they will have to answer for themselves.

The Field of Small Stokers

There are over a million logical prospects for small stokers according to a nationwide survey. There are five million prospects in the household field. Approximately 260,000,000 tons of coal are burned annually in these two fields.

This article contains excerpts from a paper which constituted the contribution of the Midwest Stoker Association to the Fourth National Fuels Meeting of the American Society of Mechanical Engineers recently held in Chicago in conjunction with the Midwest Power Engineering Conference. Although it was presented by a single representative of the association, it is in fact a symposium on the developments in the small stoker field. The information given is particularly valuable in indicating the possibilities in this work which is receiving a constantly increasing amount of attention by progressive plumbing and heating contractors throughout the country.

The strong economy appeal for stokers is the burning of lower-priced coals. This is usually the lowest freight rate coal or local coal. The stokers must be capable of burning such coals.

Many coals have low fusion temperature of ash. Stoker development has taken advantage of this fact and slagged the ash to a clinker in a manner similar to the slagging bottom furnace now used in pulverized coal practice.

There is need for standardization of combustion chamber design. These are of two types, namely, those with refractory walls and those with water cooled walls. Approximately 80 per cent of the installations have water cooled walls in connection with firebox boilers. The problem of the water cooled combustion chamber in the small plants is distinctly different from that in larger plants due to the relative cooling effect of walls as compared to total volume.

The following summary of conclusions places in the hands of the plumbing and heating contractor stoker dealer a clear and concise idea as to the present status of the industry and just what he may expect from these devices.

Research has not yet established the relationship of volume, heat release and physical dimensions between water cooled and refractory walled combustion chambers. Studies are being made along this line at the present time.

Automatic controls have been an important factor in the application of stokers to heating loads.

Conclusions

From the preceding discussion of the basic problems and confirmed by tests as well as extensive application, the following general statements are made.

Thermal efficiency with small stokers is approximately 30 per cent greater than with hand-fired operation.

Equipment must be inherently smokeless as education in this respect is futile.

Stokers of design to fit small heating boilers have reached a high state of development.

The lower-priced coals are successfully burned including fuels with ash of 20 per cent, moisture 20 per cent and sulphur 5.0 per cent.

Combustion chambers should have a heat release of not to exceed 50,000 Btu per cubic foot per hour.

Liberal sized stokers are necessary.

Smokeless combustion is assured in combustion chambers in the prescribed proportions.

With such combustion chambers and with proper sizes of stokers, combustion losses can be reduced to a minimum. The excess air for combustion can be held to 30 per cent and losses due to carbon in the refuse can be held below 2 per cent.

Automatic control of stokers has been developed to a point comparable with that of other fuel burning equipment.

Research is required in the matter of design to differentiate between water cooled and refractory combustion chambers and to establish definite standards for the design of each. This must be sufficiently comprehensive to cover the various commercial boilers, stokers and full range of fuels.

The commercial and merchandising problems are of such broad scope and so vastly different from that of the larger stoker that much intensive research must be done to best fit the stoker to the average installation and produce the best average result.

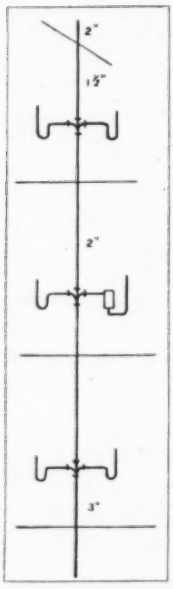


Fig. 1

Code Study Reveals Wide Difference In Venting Practices

By
R. M. STARBUCK, Jr.

If your code needs revision, and every code needs revision from time to time to take care of changing requirements, it is important that you know what the trend in plumbing is. In the majority of cases, others have faced and successfully worked out the problems you will meet. It remains only for you to profit by their experiences. These experiences are listed in tabular form in Domestic Engineering's Plumbing Code Tabulations

THREE articles have preceded this one on the subject of the tabulation of venting practices of the country.

It might be thought that the practice of one city or town would be much like that of another, but this is by no means the fact. These tabulations show in many instances that certain practices are more or less common to a certain limited section of the country, and certain other practices will be common to some other section. As far as we can see, however, the one instance where there is any large degree of unanimity in practice throughout the country, is among the states, cities and towns which have adopted the Hoover code. We see in the adoption of this code some promise of future universal plumbing practice, or something approaching it, for the Hoover code continues to be adopted as state and municipal plumbing law.

In the preceding article, because of lack of space, we were unable to give consideration to the last column in the tabulation, the one on "Special Vent Requirements." Into this column are thrown many facts concerning plumbing practice, which are more or less unusual, and we want to take up some of these before going on with the tabulation in this present article.

In Fort Wayne, Ind., the plumbing code prohibits the use of wet vents. At the same time there is a regulation which states that if the waste of a bath, basin or sink connects between the water closet outlet and the stack, the water closet will require no vent. As we understand this situation, the reason that no vent is required is that whatever waste connection or connections enter between water closet and stack, actually act as a vent for the water closet, and in that event each such connection is a wet vent for the water closet. Either this is a contradiction of the section prohibiting wet vents, or wet vent means something different in Fort Wayne.

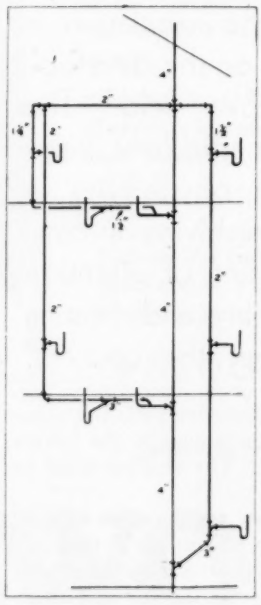


Fig. 2

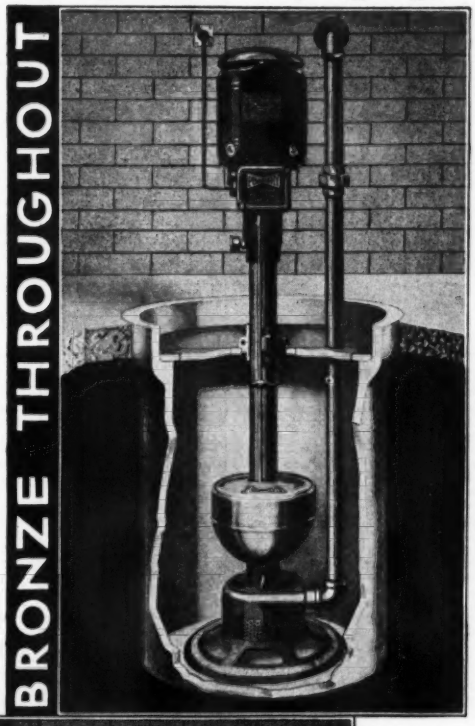
Unnecessary Requirements

Two of the Illinois cities have this requirement: "If over five fixtures vent into one pipe, same shall extend through roof. Less than five fixtures may vent into one pipe, which may connect to the stack 5 ft. above the highest fixture."

We are unable to understand why in one case the main vent must pass separately through the roof, and in the other it may connect with the stack. Of course, the requirement that the connection shall be made 5 ft. above the highest fixture seems, at least to us, unexplainable.

It should be stated that one of these two cities calls for this connection to be made

A few reasons why— Plumbing Contractors install..



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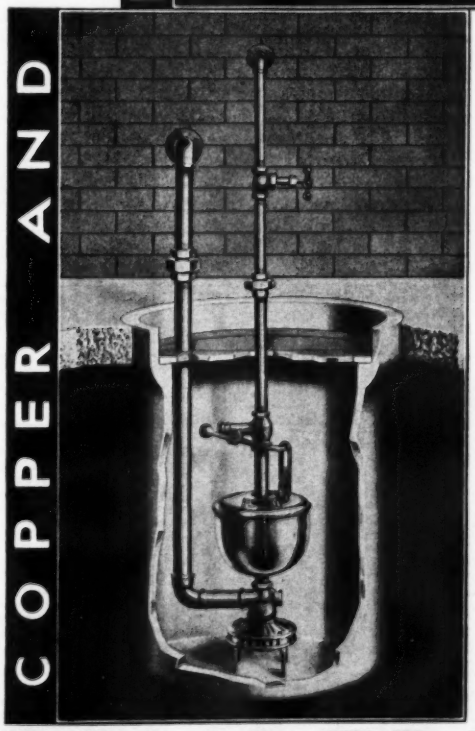

TO dispose of seepage below sewer level—or where sewerage facilities are not available—many plumbing contractors prefer one of the units illustrated here. Local conditions determine whether the electric or hydraulic unit will be most economical—but both pumps have many characteristics that appeal to the plumbing contractor.

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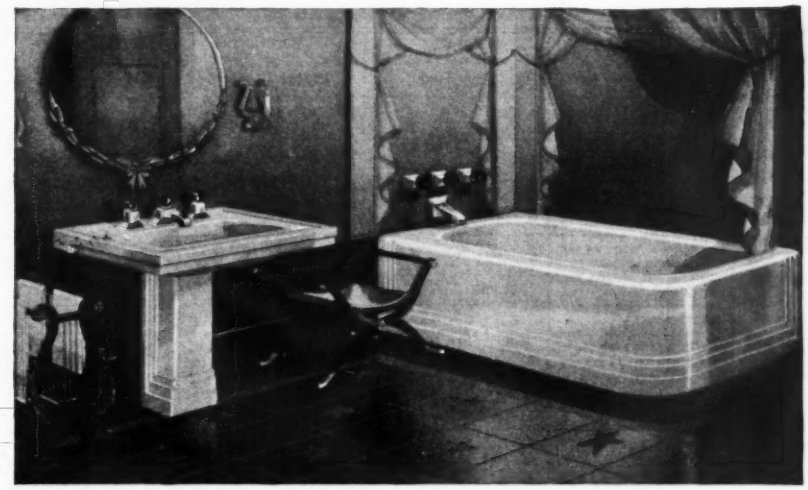
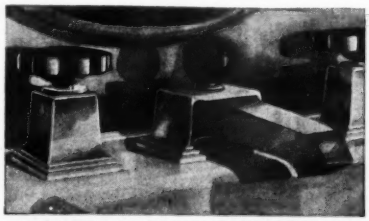
PENBERTHY PUMPS REMOVE SEEPAGE WATER

City	General Vent Requirements	Vents not Required	Venting of Water Closets	Circuit and Loop Vents	Wet Vents	General Remarks
Minnesota						
Duluth	Vent pipes for P traps not over 10 in. from trap; not over 4 in. for other traps	For top fixture within 6 ft. of stack	1½ in. W. C. vents allowed			
Hibbing	Continuous vents required		1½ in. W. C. vents allowed			
Minneapolis	Continuous vents required. Vent pipes not over 2 ft. from stack	In buildings not over 4 stories, sink or lavatories 1 ft. from stack need no vents	For basement W. C. in 2 story house, with no more than 2 W. C.'s on upper floors, 1½ in. vent allowed			Lead pipe used only on short vent connections. Each trap vent shall have a cleanout.
Northfield	Venting specified					
St. Paul	Continuous vents required. Vent pipe not over 2 ft. from stack	For highest fixture, also highest W. C. if within 2 ft. of stack			Not allowed	In each basement at least one 2 in. vent must connect to main vent for future ues.
Virginia	All traps to be vented except non-siphon traps		1½ in. W. C. vents allowed			
Mississippi						
Jackson	Vent pipes not over 2 ft. from trap	Where 1 lavatory and bath enter 2 in. stack, bath drum trap requires no vent	W. C.'s over 5 ft. from stack shall be vented			
Missouri						
Bowling Green	Continuous vents required					
Columbia	Continuous vents required. Vent intersections 1 ft. above fixture		1½ in. W. C. vents allowed. 2 adjacent W. C.'s may have 1½ in. common vent	Allowed on 3 or more W. C.'s		No down-draft vents shall be used on new work.
Jefferson	Continuous vents required. Vent intersections 1 ft. above fixture		1½ in. W. C. vents allowed. 2 adjacent W. C.'s may have 1½ in. common vent	Allowed on 3 or more W. C.'s	Horizontal wet vents not over 2 ft. long	No down-draft vents shall be used on new work.
Joplin	Vent pipe not over 2 ft. from trap		All W. C.'s to be vented from the branch			The Rand or other equal ventilating system may be used when not possible to vent.
Kansas City	Continuous vents required	Highest fixture on stack needs no vent		Allowed on groups of 2 or more W. C.'s, pedestal urinals or slop sinks		
Moberly	Continuous vents required. Vent intersections 1 ft. above fixtures		1½ in. W. C. vents allowed. 2 adjacent W. C.'s may have 1½ in. common vent		Horizontal wet vents not over 2 ft. long	
St. Joseph	Continuous vents required		A W. C. 10 ft. from stack shall have separate vent stack		Bath traps may be vented through lavatory connections	Vent pipe shall extend 1 ft. above fixture before connecting to main vent.
St. Louis	Continuous vents required. Vent pipe not over 3 ft. from vent			Allowed on batteries of W. C.'s, pedestal urinals, slop sinks and showers, if taken off in front of last fixture. Relief vents required		
Sedalia	Continuous vents required	Kitchen sink drum or non-siphon traps not vented	A W. C. 10 ft. from stack shall have separate vent stack	Allowed on 3 or more W. C.'s	Bath traps may be vented through lavatory connections	No down-draft vents shall be used on new work.
Springfield	Vent pipe not over 5 ft. from trap. Continuous vents allowed on Durham work where practical					No down-draft vents shall be used on new work. Horizontal lines 25 ft. from stack must have separate vent stack.
Montana						
Billings		2 top W. C's. or other fixtures require no vent		Allowed on groups of W. C.'s and other fixtures		
Butte	Continuous vents required	1 to 4 W. C.'s on same floor within 15 ft. of stack need not be vented. Bath drum traps require no vent		4 or more W. C's. or urinals, they may be loop vented		Lavatory at center of room, having deep seal trap, requires no vent.
Great Falls	2 fixtures other than W. C.'s, back to back, not over 12 in. from vent, may have one vent	The highest single fixture except W. C.'s require no vent if within 4 ft. of stack.				
Nebraska						
Holdrege	Continuous vents required	Bath drum traps require no vent				In all but Durham systems, waste and vents from traps under floors must be of lead, extending to level of water line of fixture.
Lincoln	Continuous vents required. Vent pipe not over 3 ft. from trap			Allowed on batteries of 2 to 8 W. C.'s, pedestal urinals, slop sinks or showers, if taken off in front of last fixture. Relief vents required	One lavatory may connect to W. C. vent	
Omaha	Vent intersections 6 in. above highest fixture of group. Vent pipe not over 15 in. from trap				No wet vent for drum trap shall exceed 5 ft. of horizontal run	In all but Durham systems, waste and vents from traps under floors must be of lead, extending to level of water line of fixture.
New Hampshire						
Concord	Venting required		W. C. vent to be 3 in. if over 30 ft. long			Bow venting not allowed if forming of a pocket results.
Laconia					Not allowed	A lateral branch of over 12 ft. shall have a separate vent line.
Manchester		Venting not required on drum traps for baths and wash trays and fixtures within 4 ft. of stack	W. C. vent to be 3 in. if over 30 ft. long			
New Mexico						
Albuquerque	Vent intersection 3 ft. above floor		W. C. within 2 ft. of stack requires no vent if fixtures above have combined waste not over 2 in.			



NEO-CLASSIC DESIGN; PEMBROKE MODEL, IN A DIRECTOIRE SETTING

NEO-CLASSIC



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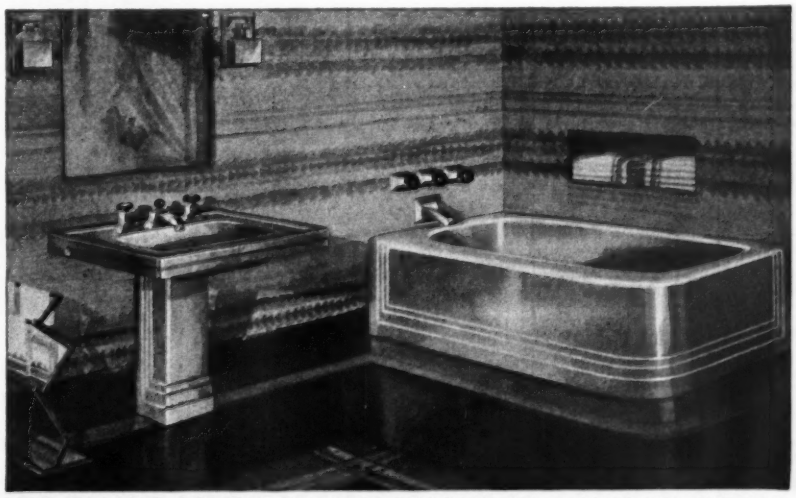
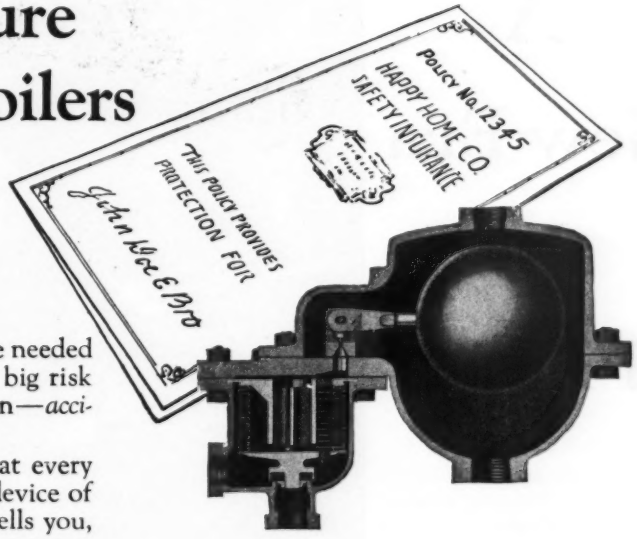


NEO-CLASSIC DESIGN; PEMBROKE MODEL, IN A MODERN SETTING

City	General Vent Requirements	Vents not Required	Venting of Water Closets	Circuit and Loop Vents	Wet Vents	General Remarks
New Jersey						
Asbury Park	Trap vents prohibited					
Atlantic City	All fixtures except W. C.'s shall have anti-siphon traps					
Bayonne	Vents to be connected as near crown as possible					Care must be taken to prevent waste splashing into vent opening and causing stoppage.
Belmar	Each trap shall have an automatic vent or vent taken from crown of trap when required		Siphon W. C.'s need not be vented			
Bloomfield	Venting called for				Not allowed	
Bound Brook	Continuous vents required				Not allowed	
Bridgeton			A W. C. branch 15 ft. or over must have 2 in. vent stack.	Allowed for 2 or more W. C.'s.		All fixtures 15 ft. or more from stack, must be vented full size through roof or have anti-siphon trap.
Bridgewater	All fixtures to be vented when over 5 ft. from stack					
Burlington	Venting not mentioned					
Camden	Continuous vents required	2 single bathroom fixtures on separate floors within 8 ft. of main vent require no vent if no fixtures above. 3 sinks or lavatories on 2 in. stack; 4 to 10 on a 3 in. stack; and larger numbers on 4 in. stack, require no vents if within 8 ft. of stack.		Allowed for 3 or more W. C.'s or other fixtures, if within 8 ft. of horizontal line		
Carteret	Unvented non-siphon traps used		W. C.'s not vented unless over 5 ft. from stack			
Clifton	Vents to connect as near crown of trap as possible				Not allowed	
Collingswood	All traps to be vented		A W. C. 8 ft. or more from main vent must have a 4 in. vent through roof			
Cranford	All traps to be vented				Not allowed	
Dover	Continuous vents when required	On fixtures having 1½ and 2 in. wastes, also basin and bath wastes, when fixture not over 10 ft. from stack.				
Dunnellen	Continuous vent for all traps over 4 ft. from stack		When W. C.'s on more than 1 floor, top W. C. not vented if W. C. on lower floor not over 3 ft. from stack	Allowed on batteries of W. C.'s	Not allowed	
East Orange		Top fixture not over 5 ft. from stack needs no vent			Not allowed	
East Rutherford	All traps to be vented				Not allowed	
Elizabeth	All traps to be vented	Top W. C. if within 3 ft. of stack needs no vent	A W. C. over 10 ft. from main soil line, shall have separate 2 in. vent through roof			
Fanwood		A 1½ in. P trap within 5 ft. of stack, with 2 in. waste, requires no other vent	W. C.'s within 5 ft. of stack require no vent			
Hoboken	All traps to be vented					
Irvington	Continuous vents required. Vent pipe not over 3 ft. from vent			Allowed on batteries of 2 to 6 W. C.'s or other fixtures, and shall be taken off in front of last fixture. Relief vents required		A fixture may waste into vent stack at its base if within 4 ft.
Kearney	All traps to be vented					Short bends on vents above crown of trap prohibited.
Linden	All traps to be vented	For W. C.'s. within 5 ft. of main soil line	A W. C. 10 ft. or more from main soil line must have 2 in. vent through roof			W. C.'s in buildings over 3 stories must be vented.
Long Branch	All traps to be vented			Allowed for batteries of all fixtures		A branch 15 ft. or longer, to any fixture, shall be vented by a 2 in. stack, or have anti-siphon trap.
Madison	All traps to be vented					All vent pipe must drip into the vertical vent line.
Maplewood	All traps to be vented	On top fixture if within 5 ft. of stack			Not allowed	
Montclair	Traps shall not be vented. Only P traps shall be used					A separate vent shall not be run for a trap that is within 4 ft. of main stack.
Norristown	Continuous vents required	On basins and baths when not over 10 ft. from trap outlet to stack, and anti-siphon is used			Not allowed	
Neptune City	Trap vents are prohibited					
New Brunswick	Continuous vents required	When trap is within 5 ft. of stack			Not allowed	

EXTRA "INSURANCE"

for low pressure heating boilers



HERE is a "policy" that offers the needed extra protection against one big risk in low-pressure boiler operation—*accidental low water.*

Your own experience tells you that every heating boiler needs a protective device of this type, but your commonsense tells you, too, that *real* protection demands apparatus of the utmost dependability.

Positive Protection Against Low Water

The Webster Boiler Protector has been designed especially to provide *positive protection* against the dangers resulting from accidental low water. Study the illustration above. Note the following important features which *doubly qualify* the Webster Boiler Protector for this safeguarding duty.

The water inlet valve and operating mechanism are in a chamber *separate* from the float chamber. Low temperature prevails in this chamber at all times, reducing to a minimum the likelihood of precipitation of scale forming matter. This is further minimized by the fact that a *very small volume of water* passes through the operating mechanism. Under average conditions the amount of water is so small that, even where mountain water, high in lime and magnesia, has been used in numerous test installations, no difficulty has occurred.

Only one bearing in the entire mechanism —movement of all parts is very limited.

Non-corrosive materials throughout—all water valve parts keep cool at all times.

The entire mechanism is accessible and readily demountable for inspection.

Rapid action due to enormous power and great capacity assures prompt restoration of water level with minimum change in water line and minimum addition of raw cold water. Protector is placed 3″ below normal water line, 1″ above bottom of gauge glass. The hand valve is used for feeding water up to normal level. Can be installed during the winter as only a few hours shut down is necessary.

For Every Type of Low Pressure Heating System

In the Webster Boiler Protector heating contractors are finding a profitable means of developing preferred business in a growing market. New as well as existing installations—vacuum, vapor and one-pipe jobs; coal, oil and gas burning jobs—all of them need the *positive protection* obtainable only with the exclusive features of the Webster Boiler Protector.

Detailed information and quotations on request. Write or phone today to nearest Webster Branch

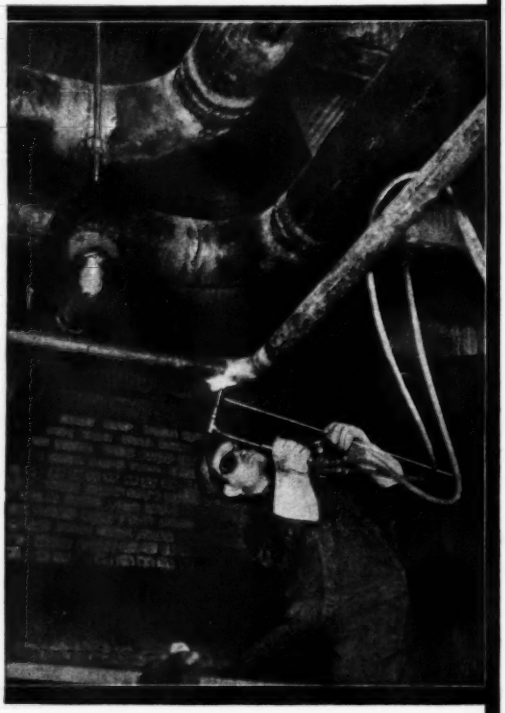
Warren Webster & Company, Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Branches in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada

P-7

The New Webster Boiler Protector

OXWELDING

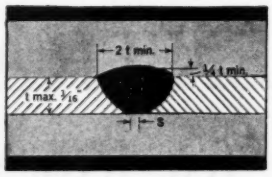
A New Era In Piping



ECONOMY in the transmission and use of liquids and gases in most cases requires high working pressures and these have been ever on the increase during late years. High working pressures have brought about an entirely new conception of practical pipe joints and fittings. Oxwelding has become the standard means of pipe jointing, as a result of this new era, for high pressure piping as well as for piping operated under normal pressure.

An oxwelded joint is stronger than any other type of construction. In strength it is equal to, and if the weld is built up above the surface, greater than the strength of the pipe itself. It is also permanently tight and after testing may be forgotten. It has the same resistance to corrosion as the pipe wall.

Under Procedure Control, welded piping construction may be undertaken with the same confidence in a satisfactory result as older methods, and with further assurance of increased economy and serviceability.



DESIGN STANDARDS FOR OXWELDED PIPING

Any welded piping system, even in its most complicated form, is a combination of a few fundamental welding design details.

WELDED LINE JOINTS

Open Square Butt Weld

Explanation of Design:

The Open Square Butt Weld illustrated is used mainly for thin-walled pipe, with which sufficient weld depth penetration can be obtained without beveling, due to the melting of the steel with the blowpipe flame.

Uses:

The Open Square Butt Weld is recommended for standard pipe up to 2½ in., extra heavy up to 1½ in., and for all pipe having a wall thickness of 3-16 in. or less, for all services.

Specification:

When the Open Square Butt Weld is specified the following features should be included in the specifications:

1. For the smaller sizes of pipe, spacing between ends shall be as indicated in Table 1, page 11, "Design Standards for Oxwelded Piping." For sizes larger than 4 in. spacing shall be 3-16 to ¼ in.

2. Welds shall be thoroughly fused to the depth indicated in the drawing.

3. Welds shall have a minimum width of twice the pipe wall thickness and shall be symmetrical with the center line of the joint.

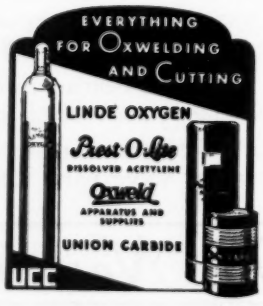
4. Welds shall be built up to present a gradual increase in thickness from edge to center.

5. Weld reinforcement shall be at least the minimum shown in the drawing.

6. The weld shall be of sound metal free from laps, gas pockets, slag inclusions or other defects.

The above is excerpted from a handbook on fundamental designs, titled, "Design Standards for Oxwelded Steel and Wrought Iron Piping," published by The Linde Air Products Company.

A copy of this handbook should be in every plumbing and heating contractor's office. It is yours for the asking.



THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

126 Producing Plants UCC 627 Warehouse Stocks

IN CANADA, DOMINION OXYGEN COMPANY, LTD., TORONTO

36 District Offices

Atlanta	Detroit	New Orleans
Baltimore	El Paso	New York
Birmingham	Houston	Philadelphia
Boston	Kansas City	Pittsburgh
Buffalo	Los Angeles	St. Louis
Chicago	Memphis	Salt Lake City
Cincinnati	Milwaukee	San Francisco
Cleveland	Minneapolis	Seattle
Denver		Tulsa

LINDE OXYGEN · PREST-O-LITE ACETYLENE · OXWELD APPARATUS AND SUPPLIES · UNION CARBIDE

2 ft. above the overflow of the highest fixture, and this, too, seems difficult to accept, for the entire point is to get above the highest overflow, and all pipe used in rising above that point is thrown away.

South Bend, Ind., calls for the use of a relief when necessary in buildings over three stories high. We do not understand this, and should like to be enlightened.

Several codes show the requirement of a cleanout on each trap vent. This does not make much of an appeal to us. We think that if continuous venting is used, there will be little vent stoppage, and, therefore, no need for vent cleanouts.

Only 1 in. Vents on Water Closets

Parsons, Kans., calls for the vents of all fixtures except water closets to be 1 in., which, of course, is very poor practice.

A regulation that appears in several codes is to the effect that, "Any 10-ft. vertical branch or 20-ft. lateral branch must pass full size through the roof or connect with the main vent above all other fixtures." This regulation is in use in many cities of the country.

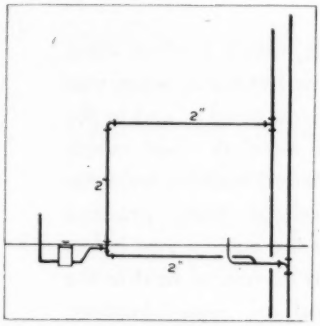


Fig. 3

In Biddeford, Maine, there is this requirement: "In all buildings of four floors or more, where fixtures are on the fourth floor, every fixture trap shall be vented."

Baltimore and Hagerstown, Md., have the following requirement: "Vertical vent lines 20 ft., or longer, shall connect at bottom with the stack, with a fixture connection to wash out rust and scale." This is a good requirement if it can be complied with.

Cumberland, Md., demands that any fixture which is over 7 ft. from the main vent line, shall have its vent carried through the roof.

Several of the Michigan cities require no vent for bath tubs when they are located within a certain distance of the stack.

Often when two or more cities in the same vicinity have identical requirements, it means that the requirement after getting into the code first enacted, has later been copied into other codes. This may or may not result satisfactorily, all depending on whether the original requirement was a good one or not.

Tabulation Considered

Now let us turn our attention to the tabulations shown in connection with this present article. They cover the states taken alphabetically, from Minnesota partly through New Jersey.

The first column shows a number of interesting features. In the first place, while a large number of cities, as in the two previous tabulations on this subject, call for continuous vents, a considerable number make no such provision. The New Jersey cities, for instance, in but few instances call for continuous vents. They do, however, in a majority of instances, demand that all traps be vented.

In many cases, not only in New Jersey cities, but in other sections of the country, the requirement is so poorly stated, that it would seem as if crown vents are demanded. The Bayonne and Clifton requirement calls for the connection of the vent as close to the crown of the trap as possible. We cannot believe that these and other cities are still allowing crown vents. It is wrong to allow such indefinite and inadequate statements on such an important subject as venting, as appear in a large number of plumbing codes.

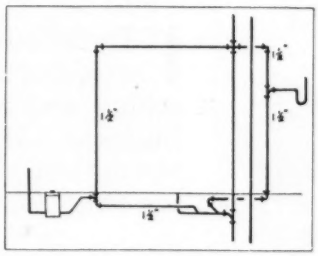


Fig. 4

Three of the New Jersey cities prohibit the use of trap vents. One of these three cities also calls for the use of P-traps. There does not seem to be much consistency in these two laws.

Inspector Given Wide Range

Hudson, N. Y., calls for the venting of traps unless the plumbing inspector determines that venting is unnecessary. Such an ordinance provides a large loophole, and cannot possibly be a satisfactory one. The less chance there is in a plumbing code for special decisions or interpretations, the fairer it will be for those working under the code.

Crown Vents Allowed in New York Cities

Two New York cities allow crown vents, but prefer continuous vents. That is a very unwise position to take; it is straddling one of the most important questions in plumbing practice. There is only one right position to take, and that should be maintained.

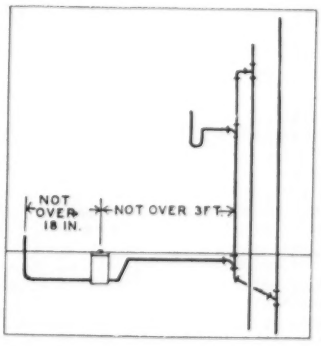


Fig. 5

Referring to the second column, we find that in Minneapolis, in buildings not over four stories high, sinks or lavatories within 1 ft. of the stack do not require venting. That means that in that particular city it is considered that, under the conditions named, sink and lavatory traps would not be subject to siphonage. We cannot agree to such a conclusion, and would welcome discussion of the practice.

Peculiar Requirements

The city of Dunkirk, N. Y., has several venting features which are unusual and seem peculiar. One of the features is the following: "In the event that more than one fixture, exclusive of water closets, are attached

(Continued on Page 142)

RETAIL ADVERTISING SERVICE

IT is obvious, in our own industry alone, that new studies in selling are being made—and that new attention to selling and merchandising goes through all American business. It means that the individual retailer must strengthen his efforts—and these pages contain advertising helps for our readers' use.

How will you heat water this spring?

Efficiency in the completion of spring household tasks — and tasks of all the year—hinges largely on hot water supplies. If there is ample hot water, immediately available — jobs will follow each other in quick succession. If not, there will be lost time—inefficiency—and lost money. Speed up household work — and save money — by installing a modern water heater. Just phone for complete information.

(In this space Your Name, etc.)

For one column space

Quick Hot Water Saves Money

In the first place, with a modern water heater, you have hot water when you need it, where you need it, and in the quantities you need it. That means there is no time lost waiting for water to heat—household tasks proceed smoothly—and the cost to you is less because there is no loss of heat in the modern method of water heating. Phone for information—without obligation.

(In this space Your Name, etc.)

A two-column newspaper ad

Dear Madam:

Sometimes things seem to go wrong for a day--don't they? I sometimes wonder if that is due to the fact that the housewife doesn't have the same degree of efficient, labor-saving equipment at her command as do we in the business world.

Take the matter of heating water. for example. If there is not a modern water heater in the home, there is almost sure to be lost time between major tasks that require quantities of hot water--time lost waiting for water to heat--time lost that, at the end of the day, shows up in the shape of the things the housewife wanted done, but which have gone undone.

Modern water heating is an automatic, continuous process. You have all the hot water you need, where you need it. Washing clothes, scrubbing floors--none of the major tasks--will exhaust the supply of hot water.

That's why modern water heating is economical, too. May we have some one call and explain it more fully--without obligation, of course?

Yours very truly,
HARRY BROWN

A plumbing sales letter

The copy on these two pages is for the use of readers of DOMESTIC ENGINEERING —without charge. If you wish to use the illustrations, they are sold at $4.20 for twelve —three months' service.

If you are using any of this copy, send us samples. We like to keep in touch with what our readers are doing.

SAYS WE NEED MODERN NURSERY RHYMES

"There are some subjects not covered by nursery rhymes these days," says Harry Brown, local plumbing and heating contractor. "For instance, the old one about the old lady who couldn't get home with her pig, unless the fire burned the stick, the stick beat the dog, and all the rest of it, might be rewritten. A great many housewives can't get everything done during the day because they don't have the necessary quantities of hot water. I think I could make up a fairly good jingle, with something about 'fire, fire, heat water,' or Mrs. Housewife won't finish her work tonight.

"That may sound a bit nonsensical, but it really isn't. If the housewife who does not have a modern water heater will count the minutes lost while she waits for water to heat in some old-fashioned way, she will find that those minutes run into hours."

Hand this publicity item to your newspaper

Spring Heating Ads

Now's the time when people can look back over the heating season, while looking forward to spring cleaning—and they will appreciate the force of the sales arguments in the ads and letter and publicity item below. Get started now on a heating plant modernization campaign.

A two-column newspaper ad

Spring Cleaning Costs

To the totals of your coal bills for the winter should be added what it is going to cost you for spring cleaning—because a large part of your spring cleaning bill should be considered part of your winter heating costs. Modern heating methods do away with those added costs—because modern heating methods are cleaner—and cost less

PHONE Main 123

(In this space Your Name, etc.)

Now—total your heating costs

Not only your fuel costs, but other costs that go with an antiquated heating plant. Add in your spring cleaning bills—try to figure out what it would be worth to you to have a heating plant that didn't demand your attention all the time, and that was clean and economical—and then you will get some idea of what it is costing you to heat your home. Modern heating is economical because it's clean and efficient. Let us show you just what we mean—without obligation on your part, of course.

(In this space Your Name, etc.)

A single column ad

ALL HEATING COSTS ARE NOT FUEL COSTS

"In figuring the cost of heating a home," says Harry Brown, local heating and plumbing contractor, "the cost of spring cleaning—or a large part of it—should be added to fuel costs. With an antiquated heating plant the expense involved each year in cleaning and decorating may be fairly considered a part of the heating costs—because it's the plant that causes part of the dirt.

"Modern heating plants are cleaner, which means also that they are more economical. They keep soot and dust where they belong—in the boiler—instead of sending them up through the house. So that a modern heating plant is not only economical because it uses fuel more efficiently, but because it is cleaner."

Give this publicity item to your local newspaper

Your Window

Window displays need change. If you have a permanent display of fixtures and equipment, make changes in lighting—use the free floor space for changed displays of accessories. Property owners who pass your window will never be particularly drawn to it if it remains the same in every detail for months at a time. Change—even small changes—is what draws attention to a window.

Dear Madam:

Just about now you will be looking over your home in preparation for the spring cleaning, deciding what must be done--and no doubt wishing that it was finished.

Have you ever tried to figure out just how much of that spring cleaning is due to the heating plant in your home? How much of the dust in the curtains and drapes and rugs came up from the heating plant? How much of the dust that dims the beauty of your walls came from the heating plant?

A modern heating plant would eliminate much of your spring cleaning costs, because the modern boiler is built to keep dust and soot from escaping. You can see one of these modern boilers in our display room--jacketed in color to keep the dust in, and to form the nucleus of a modern, usable basement.

Won't you drop in and let us show you how comfortable and convenient you would find a modern heating plant?

Very truly yours,
HARRY BROWN

(A heating sales letter)

Meet Old Boy "X" at the Milwaukee Plumbing and Heating Exhibition— Booths 39 & 40

While they worried about Business Old Boy "X" and Pete went out and got it!

"When what had looked like sure orders for new work petered out," said one of our plumber friends, "I called the boys together and laid my cards on the table. Told 'em I hated like sin to lay anyone off, for they were a mighty good bunch, BUT—unless we could get business enough to carry the overhead, meet the old payroll, vacations would be in order. Had they any suggestions?"

The silence was some heavy.

But Pete Kenny, a bright one, remarked he had an idea. 'Say, boss, what's the matter with our going out and digging up the business?' It got Pete the horse-laugh from the boys. But as I saw Pete was in earnest I told him to shoot.

" 'Well,' said Pete, 'it's this way. No jobs, no money. I know we ain't salesmen but we know our onions. Ain't one of us but who's been out on a job but has seen where other work was needed and seen that the place was shy lots of things they needed. Right in this burg are lots of plants needing work but the owners don't know they can be fixed up for little. What's the matter with splitting the town up into parts and we making house to house and plant calls, telling 'em we are inspecting free and will help 'em with any plumbing or heating troubles? You can just bet we'll find work and dig it out plenty."

Next day called the boys together, explained the idea and told them they were to be inspectors and that I would do the selling. Explained to the boys that the reports must be complete and left at office every night. Boys said they would give it a whirl, so we zoned the town. Arranged the hours so that they worked three nights the week for three hours so they could catch the man of the house in.

What resulted was business and lots of prospects, so much so that in a short time the boys were back at work. But Pete did so well that he is still ringing the doorbells and getting the orders.

He says old reliable 'X' Boiler Liquid plus a little plugging brings home the bacon. We are still going strong.

Old Boy "X" Says:

Order a Carton from Your Wholesaler Today.

"X" LABORATORIES, 25 West 45th St., New York, N. Y., U. S. A.

"X" LIQUID

Repairs Leaks in Steam and Hot Water Heating Systems, High and Low Pressure Boilers

SUPPLY NEWS

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN

New Supply House Formed in Boston

Industrial Pipe & Supply Co. is the name of a newly formed wholesale firm in Boston, Mass., handling plumbing, steam and mill supplies. The new company will take over the former business of Morris M. Fineberg & Co., Inc., 130 Southampton street, Boston. The organizers of the Industrial Pipe & Supply Co. are M. M. Fineberg and William M. Chance. Mr. Chance was formerly with the Baker Supply Co., Cambridge, Mass., and Mr. Fineberg was proprietor of the Fineberg firm.

◆

Western Supply Association to Meet March 20 and 21

The Western Supply Association will hold its annual meeting at the Hotel Del Monte, Del Monte, Calif., on Friday and Saturday, March 20 and 21, according to an announcement from the office of W. P. Baxter, secretary-manager of the association.

Reports of officers will be received and acted upon at this meeting; likewise, members of the executive committee and officers will be nominated and elected for the coming year. The meeting will also be featured, as in the past, by a number of timely talks delivered by able speakers.

Utica Radiator Corp. Opens New Warehouse

The Utica Radiator Corp., Utica, N. Y., has opened a branch office and warehouse at Fourth and Channing streets, N. E., Washington, D. C., where the company will maintain a complete stock of its products. Adam W. Jones, formerly in charge of sales in North Carolina, is district manager in charge of the District of Columbia, Maryland, Virginia, North and South Carolina and Georgia. Associated with him are Harry G. Biddell and W. W. Talcott.

◆

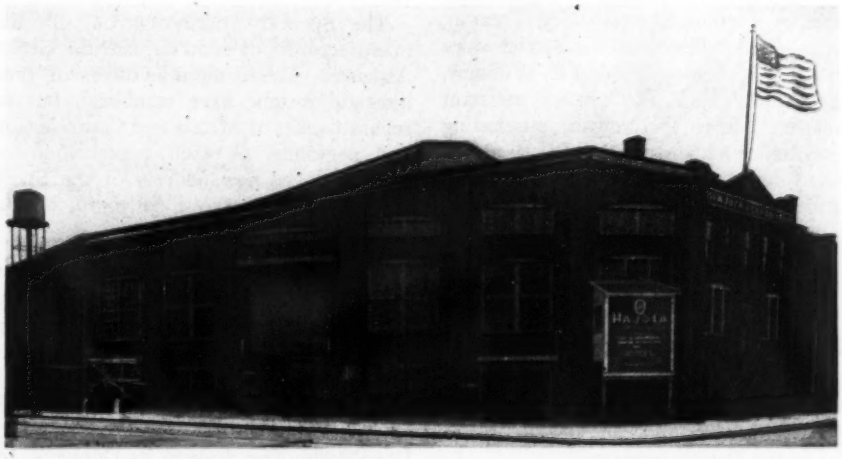
Illinois Malleable Iron Co. Elects Officers

The Illinois Malleable Iron Co., Chicago, has elected Henry E. Bullock as chairman of the board of directors. Mr. Bullock was formerly president of the company. W. H. Burgess, formerly vice president and treasurer, has been elected president of the company. J. R. Steneck is first vice-president, and George J. Reeling 2nd vice president and secretary. R. J. Wuerst is treasurer.

◆

Will Represent Rochester Circulator Co.

Trane Company of Canada, Toronto, Ontario, Canada, has been appointed Canadian distributor for the Rochester Circulator Company, of Rochester, N. Y.



The new branch of Hajoca Corp., at Second and Grape streets, Reading, Pa.

Branch managers of Pierce, Butler and Pierce Mfg. Corp., New York City, attending the company's annual convention at its Syracuse plant. Seated, left to right: H. W. Williams, George W. Harding, George T. Duncan, C. P. Hackett, T. N. Hansen, L. W. Stratton, J. W. Brady, L. R. Jacobus, I. N. Beeler, Martin A. Rooney, Samuel Moore, Philip J. Faherty, C. M. Houseman, Blair A. McFarlane, John Chapman. Standing, left to right: J. E. Ryan, L. C. McCubbin, J. J. Lanigan, John Gallivan, George E. Carey, R. N. Hickey, George Welch, A. B. Churchill, William L. Rech, Charles DeBoaldt, C. E. Lyndale, E. L. Manning, I. J. Vernier, Frank Thorndill, J. A. Bohn, J. C. Murphy, Arnold Facklam, David E. Williams, A. H. Jolliffe, Fred Good, Walter Moriarty, J. J. Wessmiller, E. T. McCormack, Clifford Smith, F. J. Witchie, George R. Flierl, Max Ryen, H. H. Chaplin and Andrew Wright

Pierce, Butler & Pierce Mfg. Corp. Holds Sales Conference

The annual two-day meeting of branch and plant managers of Pierce, Butler and Pierce Mfg. Corp., New York City, was held recently at the Hotel Syracuse, Syracuse, N. Y. The program included a tour through the plant of the corporation in Eastwood, where the various steps in the manufacture of the company's products was witnessed. New models were inspected and the testing and research laboratories were visited. Following luncheon at the plant, the afternoon meeting was given over to a general discussion of products, in charge of Blair A. McFarlane, vice president and general manager of manufacture. The activities for the day closed with a dinner at the hotel with Martin A. Rooney, vice president and general manager of sales, as toastmaster.

The meeting of the second day was presided over by Philip J. Faherty, vice president and special sales representative and was devoted entirely to discussion of jobbing and general merchandise sales. In addition to those of the Pierce, Butler and Pierce Mfg. Corp. the following representatives of Crane Co., Chicago, were present: George Hoffman, manager of plumbing sales; John Farley, assistant manager of plumbing sales; Samuel Moore, general manager of boiler and radiator sales; Ralph Moffett, district representative of the heating department at the Utica branch and Edward Rowe, district manager at the Syracuse branch. Paul Berryman, vice president and general manager of Trenton Potteries Co., Trenton, N. J., together with Fred Allen, eastern district sales manager, represented that company. David E. Williams, vice president and treasurer; E. T. McCormack, assistant general sales manager; James J. Lanigan, purchasing agent; R. N. Hickey, office manager; John W. Brady of Washington, D. C.; John M. Gallivan of Buffalo, N. Y., special representatives of Ames division of the corporation and A. B. Churchill and William L. Rech, representing the H. E. Lesan advertising agency, New York City, were also present.

◆

Will Represent Wickes Boiler Co.

The Wickes Boiler Company (heating division), Saginaw, Mich., has announced the appointment of Kilner-Mills Company, General Motors building, Detroit, as district representative in the Detroit territory.

Ames Pump Co. Elects Officers

The board of directors of Ames Pump Co., New York City, recently announced the election of William C. Dickerman as chairman of the board, and David T. Williams as a director and president of the company. Announcement has also been made of the appointment of John D. Finn as secretary of the company.

◆

Kessel & Muller Moves to New Quarters

Kessel and Muller, manufacturers' representatives of New York City, moved on March 2 from 150 Nassau street into its new quarters at 47-46 Thirtieth street, Long Island City, N. Y. At its new location the firm has a warehouse containing approximately 16,000 sq. ft., as well as a conveniently located storage yard. A three car siding is located at the rear of the warehouse. The firm of Kessel and Muller had been in business at the old Nassau street address for approximately fifteen years.

◆

Announce Change in Selling Plan

Continental Brass and Foundries Co., St. Louis, Mo., manufacturers of vapor heating specialties, has terminated its sales arrangement with the Richardson and Boynton Co., of New York City. The St. Louis company is now handling its sales direct.

◆

Spencer Thermostat Co. Combines with Metals Firm

The Spencer Thermostat Co. of Cambridge, Mass., manufacturers of controls, and the General Plate Co. of Attleboro, Mass., manufacturers of precious and thermostatic metals, have combined, but will continue as separate units of Metals and Controls Corp. The identity and personnel of each organization will remain unchanged. The new address of the Spencer Thermostat Co. is 34 Forest street, Attleboro, Mass.

◆

Appoints New Distributor

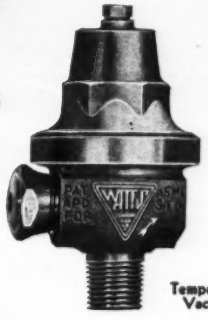
The Sundstrand Engineering Company, manufacturer of oil burners, Rockford, Ill., announces the appointment of the A. Y. McDonald Manufacturing Co., Minneapolis, Minn., as distributor in the northwest territory. An oil burner and stoker division in charge of J. H. Nolte will be established at the Minneapolis branch. The McDonald company through its Dubuque, Iowa, branch will

Pressure Relief Valve for Range Boilers

Pressure Regulator for Household Water Service

Pressure Relief Valve for Range Boilers and Storage Tanks of large capacity

Pressure Relief Valve for Range Boilers



Temperature, Pressure and Vacuum Relief Valve

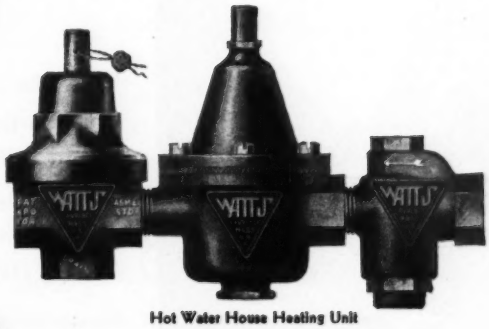
Claims or Results?

All kinds of *claims* may be made about the good points of a product—and any device can be handsomely finished. But the only thing that counts in the long run is *results*. Judged by *results*, and results *alone*, Watts Plumbing and Heating Specialties stand head and shoulders above all others.

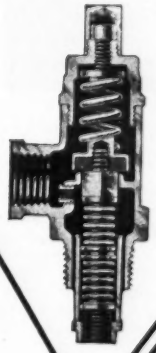
The reputation of Watts products for accuracy, efficiency and remarkable staying power is due to expert design, thoroughness in manufacture and experience. For 56 years we have tested, studied and experimented with diaphragms, spring tensions, discs and seat construction.

Watts Plumbing Specialties are made by men who are specialists—men who take pride in their work.

You'd find our new catalog interesting. Mail the coupon for a copy.



Hot Water House Heating Unit



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Without obligation, kindly send a copy of Catalog No. 30.

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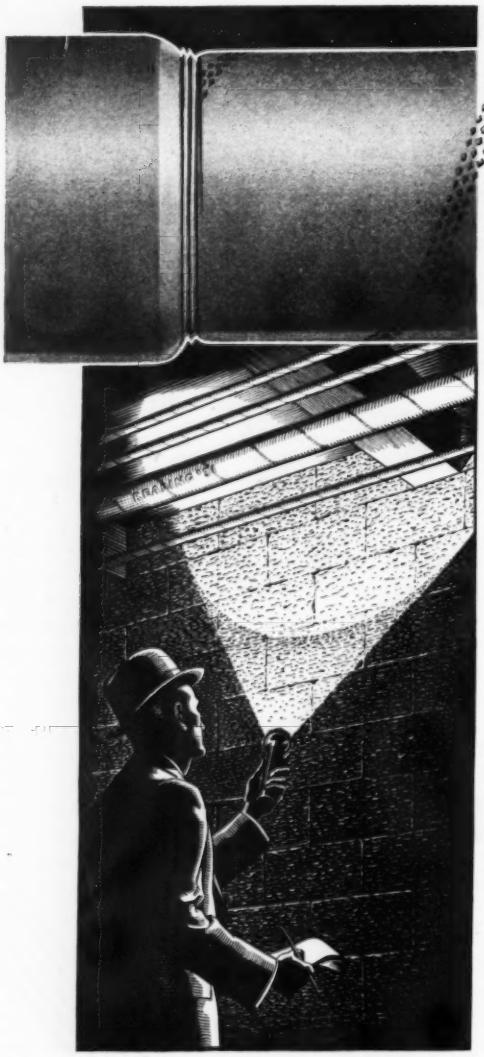

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People who have money to spend—householders, business executives, important buyers in every walk of life—are learning that the ONLY way to be sure of getting lifetime-lasting genuine puddled wrought iron pipe—made as Reading has made it for 83 years—is to look for the *indented* spiral on every length.

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You can get Reading Genuine Puddled Wrought Iron Nipples with Reading Pipe—the best combination for soil, waste, vent and inside conductor lines.

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act as distributor for western Wisconsin, eastern Iowa and northwestern Illinois with oil burner sales in charge of Carl Bizanz.

◆

Quaker City Jobbers' Association Elects Officers

At the January meeting of the Quaker City Plumbing Jobbers Association, Philadelphia, Pa., the following officers were elected for the ensuing year: David Shrull, president; Benjamin J. Landis, vice president; Harry Johnson, treasurer; H. R. Kuehner, secretary. The directors are: E. Palmer, Joseph Weinstein, W. Blentz, H. Enslin, F. J. Kelly and Peter Guano. Messrs. Shrull, Johnson and Kuehner are serving for the third consecutive term in their respective offices.

J. Gross, Lee Stein and H. Johnson are chairmen of the membership, entertainment and co-operative committees, respectively.

The outstanding feature of the association's work during the past year, according to Mr. Kuehner, was the close co-operation given by the members in regard to credits. The association's credit department is under the supervision of the Philadelphia Retail Credit Men's Association. Closer contact with the Philadelphia Wholesale Plumbing Jobbers Association is planned.

◆

Silent Automatic Corp. Holds Sales Convention

Representatives from the eight factory branches and more than 300 dealer organizations of the Silent Automatic Corp. gathered recently in Detroit, Mich., for the third annual convention of the company. Convention headquarters were at the Hotel Statler. Besides dealers and branch managers, there were present a number of salesmen who won their right to attend the convention by exceeding individual quotas during a sales contest.

Walter F. Tant addressed the gathering and reviewed business during the past year. He said the company had come through 1930, which he termed one of the most devastating years ever known to American business, in better condition than ever before.

◆

Maine Salesmen to Meet March 16

The annual meeting and dinner of the Plumbing, Steam and Metal Salesmen's Association of Maine will be held at Dunscroft, Dunstan, Maine, on March 16. The date for this year's meeting is one week later than usual.

◆

John G. Kelly, Inc., Holds Sales Conference

The Sales organization of John G. Kelly, Inc., New York City, distributors of the product of Federated Laboratories, Inc., also of that city, met at a sales conference recently in the offices of the latter company. The meeting presided over by Herbert Scott, president of Federated Laboratories was attended by John G. Kelly, president of John G. Kelly, Inc.; H. C. Schmidt, sales manager; D. C. Helynck and H. A. Baxter of W. H. Cunningham & Hill, Ltd., Toronto, Canada, representa-

Announce Final Plans for Oil Burner Show

FINAL plans for the eighth annual convention and show of the oil burner industry to be held in Philadelphia April 13-18 were completed at a recent meeting of the directors of the American Oil Burner Association in Philadelphia, Pa. Convention meetings, it was announced, will be held in the Ben. Franklin Hotel, while the exposition will be staged on the exhibit floor of the Gimbel Building across the street.

Harry F. Tapp, executive secretary of the association, disclosed that 115 out of a total of 125 booths had already been reserved by members and it was anticipated that the remaining ten booths would be gone within a short time. The sale of space, Mr. Tapp said, indicates a greater interest in the show this year than ever before.

Many of the manufacturers of burners and accessory equipment have stated their intention of introducing their latest models and improvements at this time and the show is expected to draw a large attendance from among heating contractors, engineers, builders and members of the oil heating industry. In addition the show will be opened for the second consecutive year to the general public and many of the exhibits will be designed to interest the home owner and prospective purchaser of oil heating equipment. The success of this plan at the last convention, when many sales were made directly from the floor, induced the directors to open all future shows to the public.

One result of this move is believed to be seen in the fact that the larger oil companies, attracted by the opportunity to reach the public as well as the oil burner industry, are entering the show this year. Standard Oil of New York and Sinclair were the first of the oil companies to reserve space. The list of exhibitors who already have bought space includes most of those who participated last year as well as several new firms. The exhibitors to date are as follows:

American Blower Corp., American Oil Burner Association, American Radiator Co., Automatic Burner Corp., Bell & Gossett Co., Bryan Steam Corp., The Carborundum Co., Century Engineering Corp., Century Electric Co., Chase Brass and Copper Co., Cleveland Steel Products Co., Combination Boiler Co., Combustion Oil Burner Co., Cook Electric Co., Crystal Oil Burner Corp., Domestic Engineering, Electrol, Inc., Emerson Electric Manufacturing Co., Enterprise Oil Burner Co., Detroit Lubricator Co., Dongan Electric Mfg. Co., Draft-A-Justor Corp., Fuel Oil Journal, General Electric Co., Hardinge Bros., Inc., Hart Oil Burner Corp., Heating and Ventilating, Holby Burner Corp., International Burners Corp., Janette Mfg. Co., S. T. Johnson Co., K. W. Ignition Co., Lassen & Bissell, Inc., Mayflower Oil Burner Corp., May Oil Burner Corp., McIlvaine Burner Corp., Mercoid Corp., Minneapolis-Honeywell Regulator Co., National Airoil Burner Co., Motor Wheel Corp., Nu-Way Corp., Oil-Elec-Tric Engineering Co., Oil Heat, Oil Heating Institute, The Oil Burner Association of Philadelphia, Inc., Penn Electric Switch Co., Penn Heat Control Corp., Petroleum Heat & Power Co., The Petrometer Corp., Preferred Utilities Mfg. Co., Quaker Mfg. Co., Refractory Engineering Corp., Silent Automatic Corp., Silent Glow Oil Burner Corp., Simplex Oil Heating Corp., Sinclair Refining Co., The H. B. Smith Co., Standard Oil Company of New York; Sundstrand Engineering Co., Super Oil Heator Co., Sword & Kimber Co., Taco Heaters, Inc., Teesdale Mfg. Co., Time-O-Stat Controls Co., Timken-Detroit Co., Tuthill Pump Co., Wayne Home Equipment Co., Webster Electric Co., Westinghouse Electric Mfg. Co., Winslow Boiler & Engineering Co., and York Oil Burner Co., Inc.

tives of John G. Kelly, Inc., in that country; J. D. Dawson, E. W. Wright, T. W. Sullivan, R. F. Steele, Herbert Gleason and G. F. Stebner, all of the New York City office; M. M. Revard and W. M. Gallegher of the Revard Sales Co., Kansas City, Mo.; R. D. Bitzer of Philadelphia, Pa.; S. R. Rente of Buffalo, N. Y.; Ernest Sanger of Detroit, Mich.; F. S. Wilsey of Minneapolis, Minn.; H. C. Stedt of Boston, Mass., and J. W. Moore of Chicago, Ill.

Mr. Scott addressing the meeting talked about the composition of boiler liquid and its chemical action on boilers, and Mr. Schmidt spoke about merchandising methods.

◆

Optimism Prevails at Speakman Co. Meeting

Speakman Co., Wilmington, Del., held a get-together meeting at its plant on February 12, at which one hundred master plumbers from parts of New Jersey, Maryland and Pennsylvania, as well as Delaware, heard addresses by Harry Speakman, president of the company; Philip J. Faherty, vice president of Pierce, Butler & Pierce Mfg. Corp., New York City; A. E. Hayman, president of the Wilmington Master Plumbers' Association; Frank Escott, a former president of that association, and Charles Hackett, Philadelphia manager of Pierce, Butler & Pierce Mfg. Corp. Willard Speakman, vice president of the Speakman Co., presided.

Mr. Faherty, speaking on the business outlook, said: "Within three months the entire country will enter upon the greatest period of prosperity that has ever been witnessed. It will start with the building trades and will continue for at least five years." He gave as his reasons for this opinion figures of recent building surveys which disclose the fact that, while in some areas the country is over-built, the condition is far from general and the reassuring effect the easing of the political situation in Washington is likely to have on the country. Mr. Faherty concluded by urging the plumbing and heating contractors to keep after existing business.

Mr. Hackett touched on the relationship that has existed between his company, now ninety-one years old, and the Speakman Co., in its sixty-second year of existence.

Mr. Escott described some of the unsanitary conditions that exist in parts of the state and the need for a state code based on the Hoover code.

◆

Moves Office and Warehouse]

The Sanithermo Corp., of Fort Wayne, Ind., has moved its office and warehouse from 728 Osage street, in that city, to 1411-17 South Clinton street. The new quarters offer enlarged warehouse space and a more central location.

◆

Death of Harvey Dever

Harvey Dever, vice president of the Petroleum Heat and Power Co., New York City, died suddenly at the Hotel Shelton, in that city, on February 5. He had been connected with the company twelve years and had been in ill health for the past year. He was forty-five years old and a bachelor. Mr. Dever was a member of the University of Pennsylvania club, the Engineers club and the Ardsley Country club.

KENNEDY
Radiator Valves

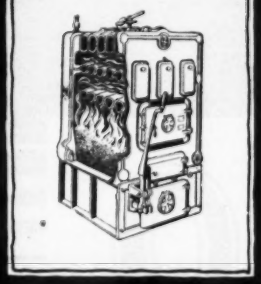
DESIGNED in accordance with standard roughing-in dimensions and include every desirable type—angle, straightway, and offset corner, with or without unions, right or left-hand and with wheel or lock shield and key on operating stem. Kennedy Valves, Malleable Iron and Brass Fittings help to speed up pipe fitting jobs by their uniform excellence and ease of connecting up to pipe lines.

You can obtain Kennedy Products from your local supply house.

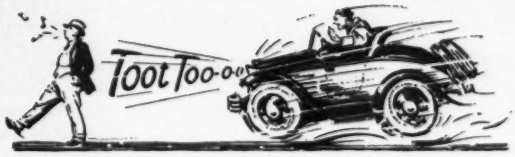
The Kennedy Valve Mfg. Co.
Elmira, N. Y.

Branches and Warehouses in Principal Cities

Burnham Boilers



The Burnham's long fire travel makes its short coal bill. And we can prove it. Want the proofs?



Don't Wait To Be Knocked Down By Burnham Facts

DON'T stand pat in the middle of the road to boiler sales, and expect not to get bumped.

Now, as never before, buyers want facts. Fuel thrift facts to assure them fuel thrift and heat contentments. Burnhams have the facts behind them. Facts like long fire travel that makes short coal bills.

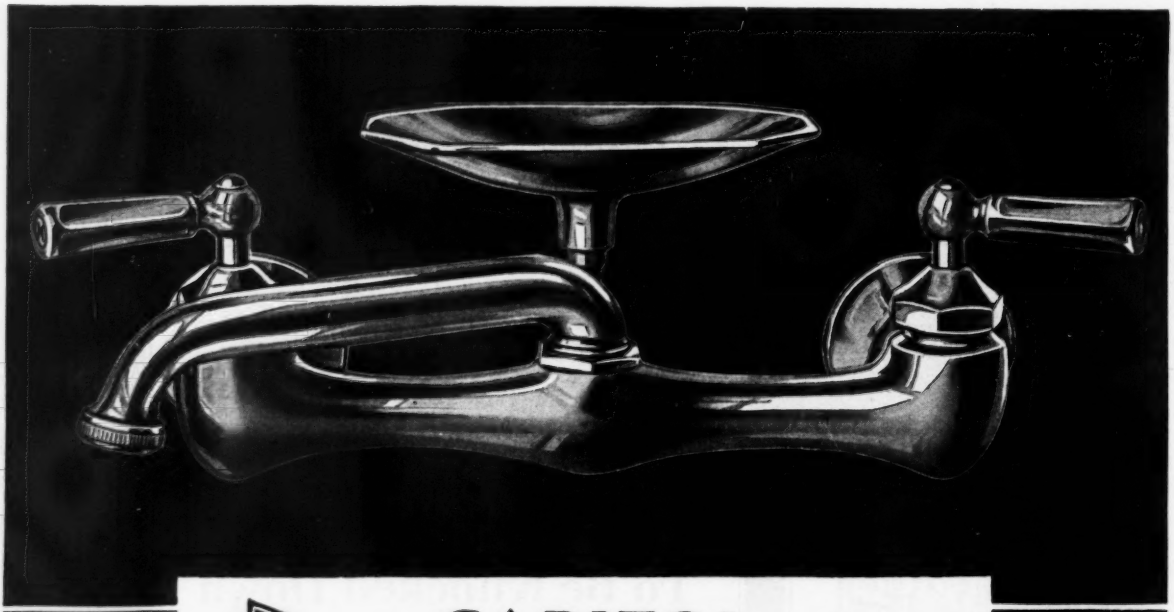
Don't wait until the facts hit you with a thud. Hit you by the hands of your pet competitor.

Don't ignore the warning, because you've heard us toot Burnham fuel thrift so often. Sit down now, and write for the Burnham catalog of fuel thrift boilers for every heating purpose.

Burnham Boiler Corporation

IRVINGTON, NEW YORK

Representatives in all principal cities of the United States and Canada



CAPITOL BOHN-910 SINK FIXTURE

Here is a sink fixture that combines utmost utility with rare good looks—worthy of a place in the finest home.

It is obtainable in two types. In chrome-plate with china soap dish and china handles, or in chrome-plate with metal soap dish and metal handles.

Both are made with 8" centers and are obtainable at the same price with either female eccentric, or male adjustable couplings.

They are precision-made throughout and in keeping with those manufacturing standards which distinguish the entire Capitol line.

Displayed and furnished by the better plumbing supply houses and plumbing contractors throughout the country. If there is not a dealer near you, write to us.

Bohn Aluminum & Brass Corporation

CAPITOL BRASS DIVISION

MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS

DETROIT~MICHIGAN

Death of Frank E. Wheeler

Frank E. Wheeler of Utica, N. Y., president of the International Heater Co. since its organization and a leader in financial and banking circles in that city for many years, died at his home on Tuesday, February 17, following an illness extending over a fortnight. Mr. Wheeler was born in Utica in 1853. He was a graduate of Yale University and in 1877 he became a partner of his father, Russel Wheeler, under the firm name of Russel Wheeler & Son. The firm made hot water and steam boilers, ranges and stoves.

Russel Wheeler died in 1895, but the business continued under the firm name until 1898, when it was sold to the International Heater Company, formed with four other concerns, the Kernan Furnace Company, the Carton Furnace Company of Utica, the Howard Furnace Company and the J. F. Pease Furnace Company, Syracuse.

Mr. Wheeler succeeded his father in several other positions of trust. He had been a director in the Savings Bank of Utica since 1895, and was also a director in the Utica Trust & Deposit Company. For many years he was director and vice president in the Utica Steam & Mohawk Valley Cotton Mills. He was a life member of the Utica Mechanics' Association and also of the Oneida Historical Society.

He was long president of the Utica Art Association and was one of the earliest members of the Fort Schuyler Club; had served on its board of governors and was president in 1930. He was a member of the Sadaquada Golf Club, and one of the founders of the Yale Club of Utica, of which he was president for two or three years. Mr. Wheeler was for many years a member of Westminster Church and had long served as a trustee.

Mr. Wheeler is survived by a daughter, Mabel A., Utica; two sons, Russel, Utica, and Cortlandt Stuyvesant, London, England; and three grandsons.

◆

Death of Dwight Hall Faulkner

Dwight Hall Faulkner, sales engineer and technical adviser for The H. B. Smith Co., Westfield, Mass., died February 8 at his home in Brooklyn, N. Y. A graduate mechanical engineer of Sheffield Scientific School of Yale University in 1916, Mr. Faulkner took a year of post-graduate work and during the World War was in the employ of the government, stationed at various plants manufacturing Liberty airplane motors. Later he became connected with the experimental and research department of the Yale & Towne Mfg. Co., Stamford, Conn. Following this and a short period during which he worked on the development of the diesel engine, he became identified with The H. B. Smith Co., making his headquarters in its New York office.

Mr. Faulkner was a member of the A. S. H. & V. E., the A. S. M. E., the Yale Engineering association, and the Yale Club, New York City. He was also president of the Dissolene Corp. and vice president of the Anthracite Coal Service. He was born in Ashtabula, Ohio, September 16, 1895. Besides his father, John C. Faulkner, manager of the New York branch of The H. B. Smith Co., and his mother, he leaves his wife and two children. Funeral services were held February 10 and burial took place at Peekskill, N. Y.

Mr. Philip Maher asks a question of Mr. Taylor, Chase representative. Photographed at the Philip H. Maher Co., Inc., 188-28 Central Avenue, St. Albans, Long Island.

MR. MAHER:

"Is Chase Copper tubing thick enough to stand high water pressure?"

MR. TAYLOR:

"Before it leaves our mill, every length is tested by 1500 pounds water pressure. It will stand from 2600 to 5500 pounds. As you know, city water pressures are rarely over 125 pounds."

QUICK FACTS

FLEXIBLE—Bends and saves fittings.
RUST-PROOF—99.9% pure copper.
STRONG—Tube and fitting stand 2900 lbs. pull.
HEAT- AND FREEZE-PROOF—Stands 400° heat. Expands instead of freeze-cracking.
SIZES, LENGTHS—All standard sizes, 45 and 60 ft. soft coils, 20 ft. straight lengths.
MARKED—Each fitting is Chase marked. Each tube every 12 in.
TEMPER—Can be bent, but will not easily sag.

CHASE

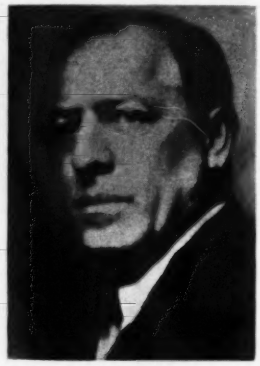
The mark that identifies good brass and copper products.

CHASE COPPER WATER TUBING

Business Personals

P. R. MORK and J. G. ORDWAY were at the last meeting of the board of directors of Crane Co., Chicago, elected vice presidents of that company. Mr. Mork is manager of the company's branch in New York City, while Mr. Ordway is manager of the branch at St. Paul, Minn. Mr. Ordway started work with Crane & Ordway Co. in St. Paul, in 1907. He has served as manager of the St. Paul branch, assistant treasurer and general manager for Crane Co. of Minnesota. Mr. Mork's connection with the company dates back to 1900 when as a boy he gave up serving his plumber's apprenticeship to join the Crane organization in the Minneapolis, Minn., branch. In 1910 he was made manager of the Duluth branch, where he remained for approximately twelve years, after which he returned to Minneapolis as manager of that branch. Mr. Mork remained in that position until coming to New York about four years ago.

J. G. Ordway



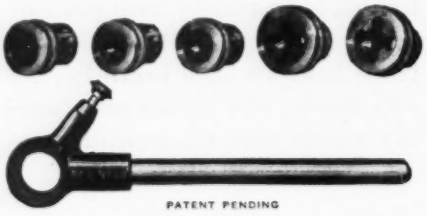
P. R. Mork

WALLACE L. HANCOCK was elected a member of the board of directors of the Trimont Mfg. Co., Inc., Boston, Mass., at the recent annual meeting of the company. Mr. Hancock has been associated with the company for more than twenty years and at the present time is treasurer of the organization.

WILLIAM B. TODD has been appointed general manager of sales of the Jones & Laughlin Steel Corp., Pittsburgh, Pa. Mr. Todd was formerly assistant general manager of sales. In 1922, he resigned a vice presidency in the Union Drawn Steel Co. to join the Jones & Laughlin sales staff as manager of sales of the cold-finished division.

ALLAN M. SCAIFE, president of William B. Scaife & Sons Co., Oakmont, Pa., with Mrs. Scaife sailed February 25 for Europe. Mr. and Mrs. Scaife expect to be gone about six weeks and during their stay abroad will visit various countries.

ALBERT H. EVANS has been appointed general manager of the W. B. Young Supply Co., Kansas City, Mo., the position formerly held by the late George H. Gorton. He assumed his new duties on March 1. Mr. Evans was associated with the Young company for more than eighteen years before assuming the position of vice president and sales manager of Wigman Co., Sioux City, Ia. He held that position from 1919 to 1928, and since then

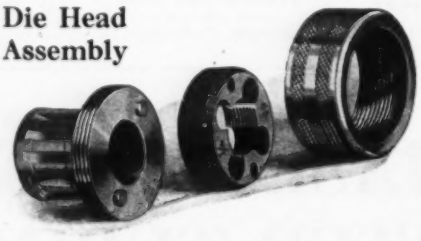


PATENT PENDING

	Net Price
No. 50 complete, ⅛" to ¾"	$16.63
Ratchet	1.93
⅛" Die Head with Die	2.80
¼" Die Head with Die	2.80
⅜" Die Head with Die	2.80
½" Die Head with Die	3.15
¾" Die Head with Die	3.15
Dies only, each size	1.93

West of Rocky Mountains, 5% Additional

Die Head Assembly



Nye "TRIAD" Stock

RATCHET TYPE

Capacity ⅛ to ¾ inches

NO KIT is complete without the Nye "TRIAD" Stocks. You may completely assemble or dissemble them by hand. (No screws or screw driver necessary.) They are time and labor savers.

Stocks are equipped with Nye solid round dies, held in place by two stationary pins built in the die heads to prevent their turning, and locked in by a threaded die head cap, easily removed by a few right hand turns.

Dies may be reversed in die holder to thread close nipples, special bushings being provided with each stock for this purpose.

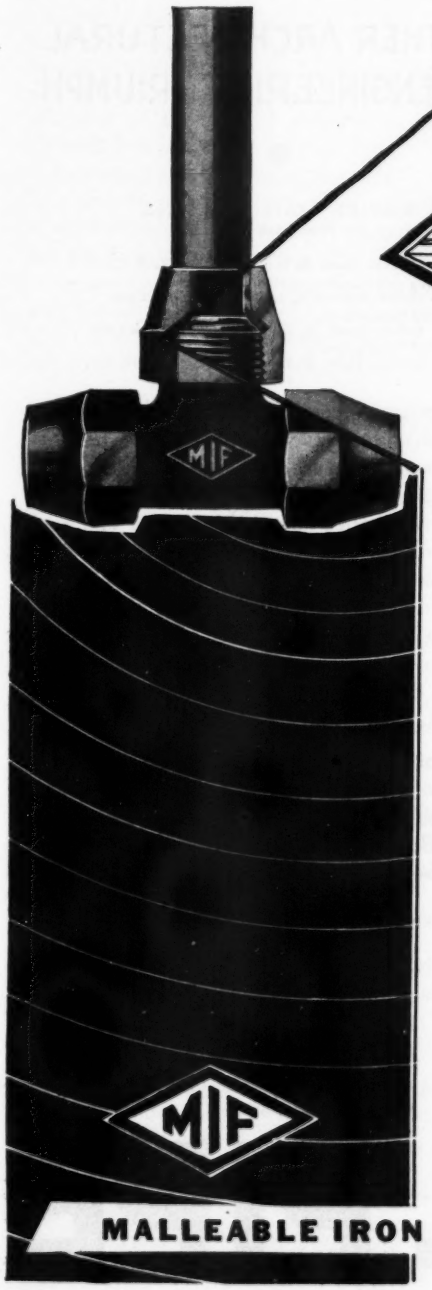
These stocks are practical and well built tools, carrying the unqualified Nye guarantee.

Manufactured by

THE NYE TOOL & MACHINE WORKS

4120-30 Fullerton Avenue :: Chicago

M. I. F. COPPER TUBE FITTINGS



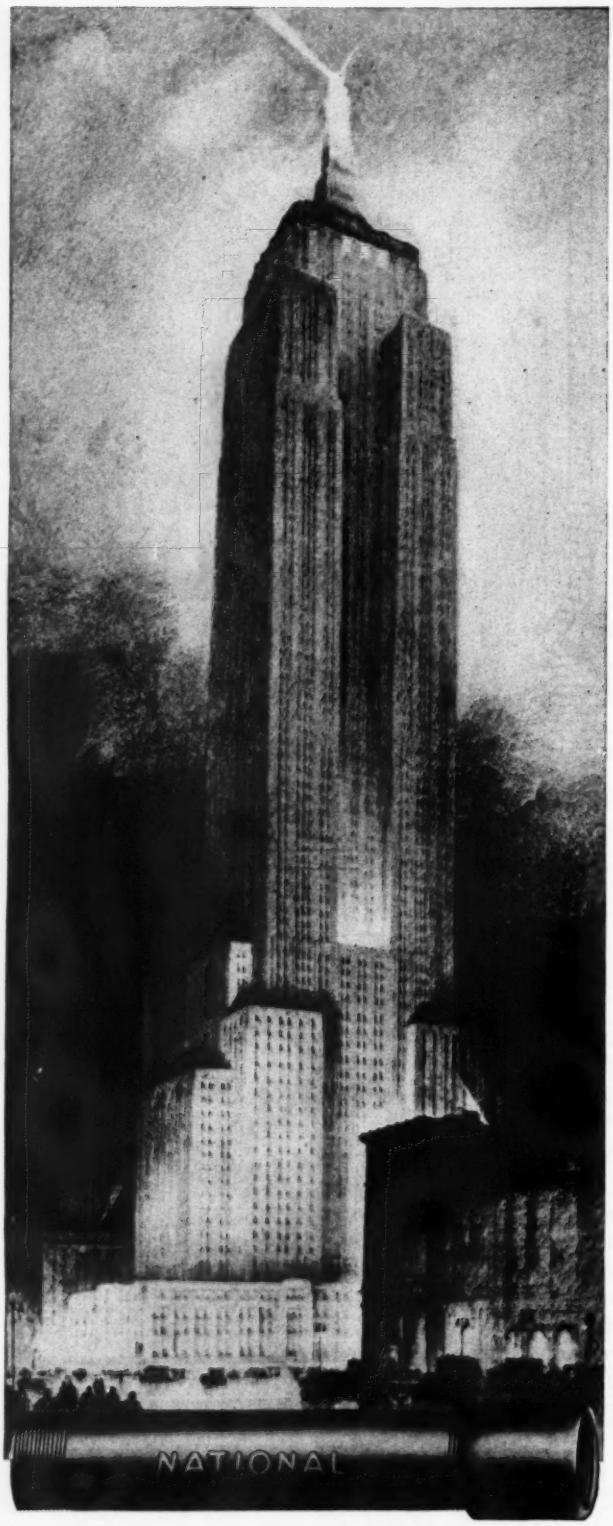
Here in detail is shown the double 45 degree seats that make The M. I. F. Copper Tube Fitting so outstanding.

Notice that the contact between the tubing and the fitting is affected in such a manner that there is no undue strain to fracture or rupture the tubing. Notice also that the tubing does not have to be cut off absolutely square in order to get a tight fit.

These are the reasons that M. I. F. Copper Tube Fittings are leak proof, shock proof and pull proof.

Use them on your next job.

MALLEABLE IRON FITTINGS COMPANY, BRANFORD, CONN.



THE NATION SALUTES

ANOTHER ARCHITECTURAL AND ENGINEERING TRIUMPH

●

EMPIRE STATE BUILDING
New York City

Architects:
Shreve, Lamb & Harmon, New York City
Heating and Ventilating Engineers:
Meyer, Strong & Jones, New York City
Heating Contractors:
Baker, Smith & Company, New York City
General Contractors:
Starrett Bros. & Eken, Inc., New York City

Conceived in great daring, designed in a consciousness of means never before given to architecture, the new Empire State Building will lift its beacon to pierce the sky eighty-five stories above the streets of New York. Framed with steel, clothed in stone and concrete, fortified and made lasting by every provision that art or science commends—America salutes this latest architectural and engineering achievement. In such an edifice, the use of any material is a high recognition of merit.

As in other structures of advanced design and monumental character, NATIONAL Pipe has an important place in the Empire State Building—a large portion of the piping being NATIONAL—

America's Standard Wrought Pipe

NATIONAL TUBE COMPANY, Pittsburgh, Pa.
Subsidiary of United States Steel Corporation

U S STEEL

NATIONAL PIPE

has represented the Grabler Mfg. Co., of Cleveland, in the territory west of the Mississippi from the lakes to the gulf.

GORDON A. ROBINSON of Boston, Mass., has been appointed representative in the state of Massachusetts for Orr & Sembower, Inc., Reading, Pa. Mr. Robinson will make his headquarters at 911 Boylston street, Boston.

G. E. MILLER and P. C. HATHAWAY, representatives in the Chicago territory for the Pittsburgh Valve & Fittings Co., Barberton, Ohio, have moved their offices from the McCormick building on Michigan boulevard to suite 1213 in the Steger building, Jackson boulevard and Wabash avenue, Chicago.

R. J. WELSH, Atlanta, Ga., representative for the Sloan Valve Company, Chicago, and The Chicago Pump Company, also of Chicago, has moved his offices to 414 Healey building, Atlanta. Mr. Welsh has been prominently identified with the plumbing trade for several years in the Atlanta territory, having recently served as president of the Atlanta Association of Plumbing and Heating Salesmen.

EDWARD B. MOORE, Montclair, N. J., for several years field secretary of the New Jersey State Association of Master Plumbers, resigned on February 14. Mr. Moore has not announced his plans for the future.

ALFRED A. DRIGGS is now associated with the Unit Ventilation Co., Inc., College Point, New York City. Mr. Driggs was formerly district manager for the Buckeye Blower Co., of Columbus, Ohio.

◆

Manufacturers of Small Oil Burners Consider Forming Association

At a luncheon of manufacturers of small oil burners, held at the Hotel Statler, Boston, Mass., on Thursday, January 15, committees were appointed to formulate plans for an association of manufacturers of small burners.

Represented at the luncheon were the Lynn Products Co., The Taft Oil Burner Co., Tower Mfg. Co., Fowler Oil Burner Co., Inc., The Alaska Freezer Co., Inc., Florence Stove Co, Bunsen Oil Burner Co., Quaker Mfg. Co., Automatic Burner Corporation and The Silent Glow Oil Burner Corp.

◆

Death of Herman E. Bastian

Herman E. Bastian, representative of J. L. Mott Iron Works, Trenton, N. J., died recently after a short illness. Mr. Bastian was well known in the metropolitan New York territory, having for many years represented The Monument Pottery Co., Trenton, N. J., and later Woodbridge Ceramic Corp., Woodbridge, N. J. He was in his forty-sixth year.

◆

Death of David Basch

David Basch, factory manager of the I. B. Kleinert Co., New York City, died January 31 at his home in that city. He was connected with the Kleinert organization for more than forty years. Funeral services were held in the Rothschild Funeral Parlors, New York. Mr. Basch was in his sixty-ninth year. He is survived by his widow, a son and a daughter.

You can't break the housing...

UNCONDITIONAL GUARANTEE
If this Housing ever Breaks or Distorts we will replace it Free
THE RIDGE TOOL CO. ELYRIA, O.
TRADE RIDGID

THE wrench with the plain-spoken guarantee—no more housing breakage, no more bother or expense of housing repairs. Break or warp the housing and we replace it free.

And you'll get wrench performance you never met before. Instant grip, instant let-go—with no slipping and no locking on the pipe. A stout I-beam handle that makes your hardest pull comfortable to your hand. Adjusting nut that turns easily in wide open housing.

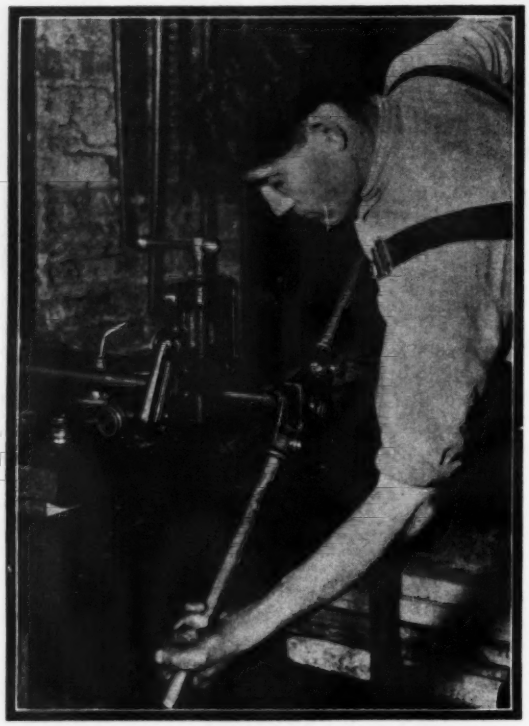
And these: easily renewable heel jaw; full-floating hook jaw that won't bend or break, with accurate pipe scale on it; handy hang-up hole in handle; rubber grips for 10" and 14" sizes.

There are RIDGID Pipe Wrenches Cutters, Vises & Threaders

Try a RIDGID and you'll realize what an advance has been made in pipe wrench construction. Your Jobber has RIDGIDs.

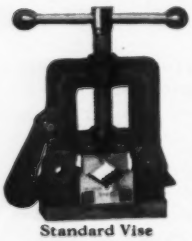
THE RIDGE TOOL CO.
ELYRIA . . . OHIO
RIDGID
PIPE TOOLS

ARMSTRONG BROS.
Better PIPE TOOLS

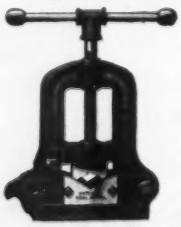


Pipe Vises that are built for *lifetime* service

These *better* pipe vises are designed to give a lifetime of satisfactory service. They are made of selected materials; frames and bases are of *Certified* Malleable Iron (from 40% to 200% stronger); the jaws are of Tool Steel, carefully milled, hardened, tempered and tested.



Standard Vise



Heavy Duty Vise

ARMSTRONG BROS. "Standard" Pipe Vises are automatic locking and combine convenient weight and strength and quick action. The Hooks of these vises are of *drop forged steel* and will not break. They are distinguished by the Arm-and-Hammer Trade Mark, the mark of the *Better* Pipe Tools.

Write for Catalog P-10

It shows, describes and gives prices of all ARMSTRONG BROS. Pipe Tools — the most complete line of pipe tools made.

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
323 N. Francisco Ave., Chicago, U. S. A.

Convention Dates

March 9, 10 and 11, 1931—INDIANA—The annual convention of the Indiana Society of Sanitary Engineers, to be held at Indianapolis, with headquarters at the Hotel Claypool.

March 11 and 12, 1931—E. S. A.—The spring meeting of the Eastern Supply Association, to be held at the Hotel Astor, New York.

March 14, 1931—UTAH—The semi-annual convention of the Utah Association of Plumbing and Heating Contractors, to be held at Salt Lake City.

March 16 and 17, 1931—KANSAS—The annual convention of the Kansas Master Plumbers' Association, to be held in Iola, with headquarters at the Kelly hotel.

March 17 and 18, 1931—MAINE—The annual convention of the Maine State Master Plumbers' Association, to be held at Lewiston, Me.

March 17 and 18, 1931—NORTH DAKOTA—The annual convention of the North Dakota State Association of Master Plumbers to be held at Grand Forks.

March 19 and 20, 1931—COLORADO—The annual convention of the Colorado State Association of Master Plumbers, to be held at the Albany Hotel, Denver.

March 23 and 24, 1931—NEBRASKA—The annual convention of the Nebraska Retail Plumbers Association, to be held at Omaha, with headquarters at the Paxton hotel.

March 23, 1931—NEW YORK H. & P. C.—The annual convention of the Heating and Piping Contractors New York Association, to be held at Syracuse, with headquarters at the Onondaga hotel.

March 25 and 26, 1931—C. S. A.—The One Hundred and Sixth Regular meeting of the Central Supply Association, to be held in Chicago, at the Palmer House.

April 6 and 7, 1931—WISCONSIN H. & P. C.—The annual convention of the Heating and Piping Contractors Wisconsin Association, to be held at Madison, with headquarters at the Park hotel.

April 6 and 7, 1931—OKLAHOMA—The annual convention of the Oklahoma State Association of Master Plumbers, to be held at Oklahoma City, with headquarters at the Huckins hotel.

April 13 to 18, 1931—A. O. B. A.—The eighth annual convention and oil burner show of The American Oil Burner Association, to be held in Philadelphia, Pa., with convention headquarters at the Benjamin Franklin hotel. The oil burner show will be held on the exhibit floor of the Gimbel building.

April 13 and 14, 1931—ARKANSAS—The annual convention of the Arkansas State Master Plumbers' Association to be held at Camden, Ark., with headquarters at the Ouachita Hotel.

April 14 and 15, 1931—NEW YORK—The annual cnvention of the New York State Association of Master Plumbers, to be held at the Hotel Martin, Utica.

April 14 and 15, 1931—MASSACHUSETTS—The annual convention of the Massachusetts State Association of Master Plumbers, Inc., to be held at Boston, with headquarters at the Statler hotel.

April 14, 15 and 16, 1931—MICHIGAN—The annual convention of the Michigan State Association of Plumbing and Heating Dealers, to be held at Muskegon, with headquarters at the Occidental hotel.

April 21, 22 and 23, 1931—TEXAS—The annual convention of The Associated Master Plumbers of Texas, to be held at Houston at the Rice hotel.

May 4 and 5, 1931—FLORIDA—The annual convention of the Florida State Association of Master Plumbers and Heating Dealers, Inc., to be held at West Palm Beach.

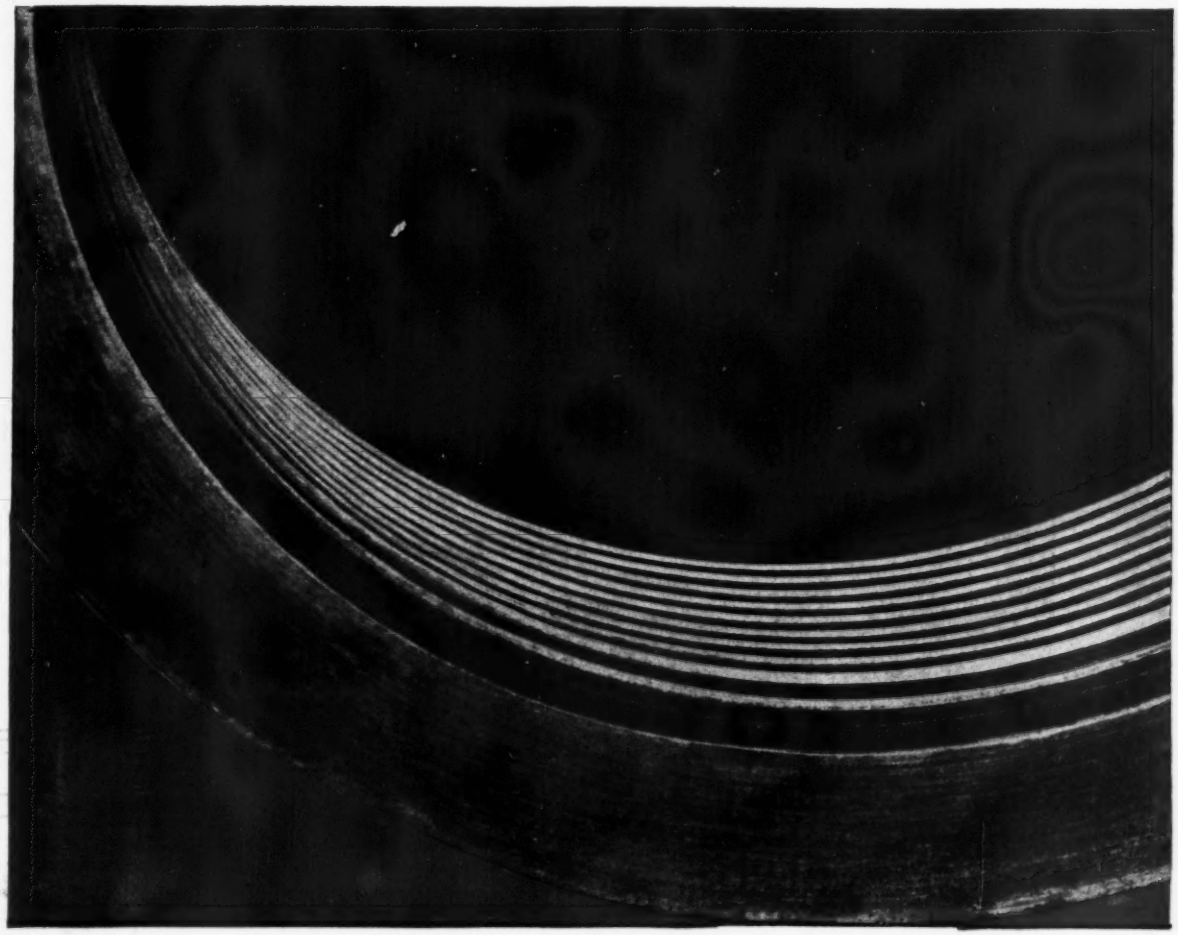
May 4 and 5, 1931—MISSOURI—The 47th annual convention of the Missouri State Association of Master Plumbers, to be held in Jefferson City.

May 6, 7, 8 and 9, 1931—H. & P. C. N. A.—The annual convention of the Heating and Piping Contractors National Association, to be held at Louisville, Ky., with headquarters at the Kentucky hotel.

May 11 and 12, 1931—TENNESSEE—The annual convention of the Associated Master Plumbers of Tennessee, to be held at Nashville.

May 11, 12 and 13, 1931—N. P. S. A.—The convention of the National Pipe & Supplies Association to be held at Cleveland, Ohio, with headquarters at the Hotel Hollenden.

May 12 and 13, 1931—CONNECTICUT—The annual conven



STOCKHAM FITTINGS

for straight lines and strength

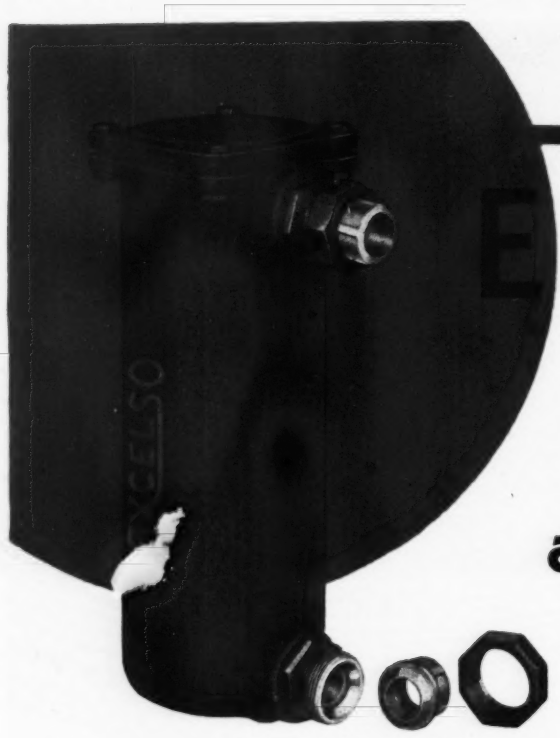
CAST IRON
Screwed Drainage
Flanged Sprinkler
MALLEABLE
Standard Extra Heavy
Hydraulic Oil Country
Railroad 300 lb. Fire Line
ELECTRIC
CAST STEEL
Screwed Flanged
STOCKHAM
RETURN BEND
for Cracking Stills

To many users, the measure of a good fitting is the threads. Of course, Stockham Fittings get unanimous approval for their clean, just-right-depth threads, but more should be demanded. Tapping must be uniform to exact centers so pipe will line up exactly according to blueprint—inner surfaces must be smooth for unimpeded flow—finish should be good for fine appearance—galvanizing must stand up—metal must be flawless. Look for these qualities and you will find Stockham Fittings measure up on every point. Over 12,000 different fittings in the complete Stockham line answer every pipe line need for steam, water, gas, oil or air.

STOCKHAM PIPE & FITTINGS CO., ***Birmingham, Ala.***

Stocks in Boston, New York, Chicago, Houston, Los Angeles

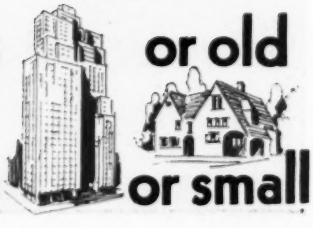
STOCKHAM
FITTINGS



EXCELSO Profits are Everywhere

In new buildings or old

In large buildings or small



WHEREVER there is a steam or vapor heating boiler—whether in new buildings or old—in large buildings or small—you have a live prospect for EXCELSO selling. Every such prospect means an exceptional profit opportunity for you.

The EXCELSO story of unlimited domestic hot water at practically no cost as long as the boiler is being fired, will interest any building owner. The fact that EXCELSO year in and year out efficiency is no mere theory but has been practically demonstrated in over 800,000 installations, should go a long way towards turning such interest into sales.

Plumbing and heating contractors who talk EXCELSO on every call know it pays them handsome profits. Take a tip from them and prosper with EXCELSO in 1931. Write for the EXCELSO profit story.

Stocked and sold by leading wholesalers and boiler and radiator manufacturers everywhere

EXCELSO PRODUCTS CORPORATION
57 Clyde Avenue Buffalo, N. Y.

EXCELSO
INDIRECT
WATER HEATERS

and extra cash from the NEW

EXCELSO "KLEARWAY" VALVE
PATENT PENDING

Means less work, a better job and extra profits on every domestic hot water supply system. Installation provides for two way cleaning and safety draw-off. Keeps heater, tank and feed lines from rust and sediment. Simple to install at a good margin. Write for details and specifications.

tion of the Connecticut State Association of Master Plumbers, to be held at New Haven, with headquarters at the Hotel Garde.

May 18, 19 and 20, 1931—PENNSYLVANIA—The annual convention of the Pennsylvania Master Plumbers Association, to be held at Allentown, with headquarters at the Americus hotel.

May 18, 19, 20, 21 and 22, 1931—CALIFORNIA—The annual convention of the State Association of Master Plumbers to be held at San Diego, Calif., with headquarters at the U. S. Grant Hotel.

May 22 and 23, 1931—OREGON—The annual convention of the Oregon State Association of Master Plumbers, to be held at Eugene, with headquarters at the Eugene hotel.

May 26 and 27, 1931—NEW JERSEY—The annual convention of the New Jersey Association of Master Plumbers, to be held at Trenton, with headquarters at the Hotel Hildebrecht.

June 2, 3, 4 and 5, 1931—N. D. H. A.—The annual convention of the National District Heating Association to be held at Boston, Mass., with headquarters at the Hotel Statler.

June 23, 24 and 25, 1931—N. A. M. P.—The forty-ninth annual convention of the National Association of Master Plumbers, to be held at the Auditorium, Milwaukee, Wis., with headquarters at the Hotel Schroeder.

June 23 and 25, 1931—N. A. M. P. AUXILIARY—The annual convention of the Women's Auxiliary to the National Association of Master Plumbers, to be held in the Hotel Schroeder, Milwaukee, Wis.

September 8-11, 1931—A. S. S. E.—The annual convention of the American Society of Sanitary Engineering to be held at Richmond, Va., with headquarters at the Jefferson hotel.

COMING TRADE EVENTS

March 16, 1931—The annual meeting and dinner of the Plumbing, Steam and Metal Salesmen's Association of Maine, to be held at Dunscroft, Dunstan, Maine.

April 6, 1931—The annual dinner-dance of the Master Plumbers Association of the State of Maryland, to be held at the Lord Baltimore Hotel, Baltimore.

April 20, 1931—Dinner to be given by the Ladies Auxiliary to the Philadelphia Master Plumbers Association, to be held in Philadelphia, Pa.

May 21 and 22, 1931—The second Midwest Bituminous Coal Conference, to be held at the University of Illinois, Urbana.

June 22, 23, 24 and 25, 1931—Exposition of plumbing, heating and allied products, in connection with the forty-ninth annual convention of the National Association of Master Plumbers, in the arena of the Auditorium, Milwaukee, Wis.

November 16-21, 1931—The Third International Conference on Bituminous Coal, to be held at Carnegie Institute of Technology, Pittsburgh, Pa.

◆

N. W. Ohio Golfers Hold Annual Meeting

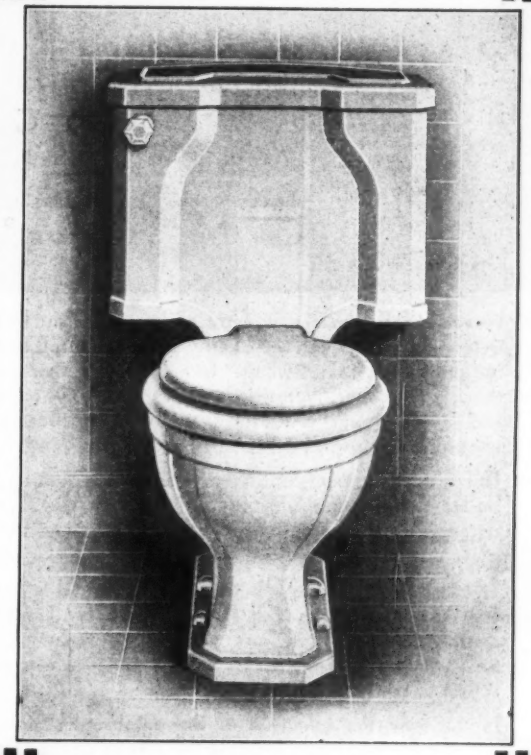
The annual meeting of the North Western Ohio Trades Golf Association of Toledo, O., was held at the "Pines," Sylvania, O., on January 30. The following officers were elected for the ensuing year: President, Ive Snyder, plumbing inspector, Board of Education; vice president, Frank Mason, Mason Equipment Co.; secretary-treasurer, Cliff Hartsing, Federal Pipe & Supply Co.; captain, Otto Burand of H. J. Rogers Co. About 45 were present and all are looking forward to the first game which will be played in April.

◆

Buys Twin City Burner Co.

Oil-Elec-tric Engineering Corp., Minneapolis, Minn., manufacturers of oil burners, recently purchased the Twin City Burner Co., of Minneapolis and St. Paul. It is also announced that machinery is being installed in a new factory at Montreal, Quebec, Can., to be owned and operated by Oil-Elec-tric Engineering Corp. of Canada, Ltd.

A *Revelation* in Beauty and Efficiency



Here is a closet combination for those remodeling jobs, one that will more than do its part to make the bath room more beautiful. Consider these Revelation features and write for the complete details:

Beautiful design; quiet operation. Height, 33 ins. Seat lid fits in depression, when raised, saving space. Extends into room two to four inches less than ordinary combinations. Can be placed anywhere in room; back is highly glazed. Integral—tank bolted directly on bowl (bolts not exposed to water). Tank trimmings of highest possible quality with many exclusive Revelation features.

These are only a few of the distinguishing points of the Revelation. Write us for the full details, today. Any of the factory branches listed below, or your jobber, will be glad to give you Revelation facts.

PEERLESS SELLING CO.
Evansville, Indiana

Peerless-Alabama Co., Inc.
3000 Avenue E,
Birmingham, Ala.

Peerless-Northern Company
Charles and Vandalia Sts.,
St. Paul, Minn.

Peerless-Atlantic Company
470 Stuart St.,
Boston, Mass.

Peerless-Oklahoma Company
1-11 W. 8th St.
Oklahoma City, Oklahoma

Peerless-Colorado Company
785 S. Broadway
Denver, Colorado

Peerless-Penna. Company
634 W. Girard Avenue,
Philadelphia, Penna.

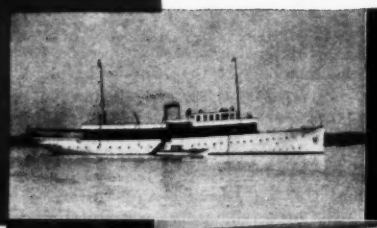
Peerless-Illinois Co.,
1238 N. Cicero Ave.,
Chicago, Illinois

Peerless-Tulsa Company
1645 E. 6th St.,
Tulsa, Oklahoma

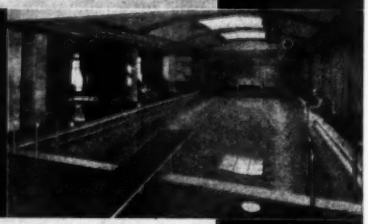
Peerless-Missouri Company
5021 Fyler Avenue,
St. Louis, Mo.

Peerless-Utah Company
150 West 1st South St.,
Salt Lake City, Utah

LOW COST HEAT *for* ALL TYPES OF BUILDINGS...



Gar-Wood supplies hot water for yacht of Charles Sorenson, Detroit, Michigan



Swimming pool of L. A. Young, 918 Boston Blvd., Detroit, Mich., is Gar-Wood heated.

Twice the heat and saves $264 yearly in home of W. P. Harris, Grosse Pointe Park, Michigan

Lower cost than with other coal or oil in home of J. R. Murray, 1162 Boston Blvd., Detroit, Michigan

Home of J. B. Ford, 57330 Kenlock Road, via Detroit, Michigan

Home of Wm. P. Green, Fenkell and Grand River Ave., Detroit, Mich.

Never before has a new type of heating plant been so quickly accepted . . . for nearly every type of structure requiring heat or hot water. In homes, apartments, clubs, schools, churches, factories, and even in swimming pools and sea-going yachts . . . the Gar-Wood continues to win unquestioned approval.

Gar-Wood engineers not only developed an entirely new boiler design especially for firing oil or gas . . . but a burner, equally revolutionary, that effects practically complete combustion from the moment it starts.

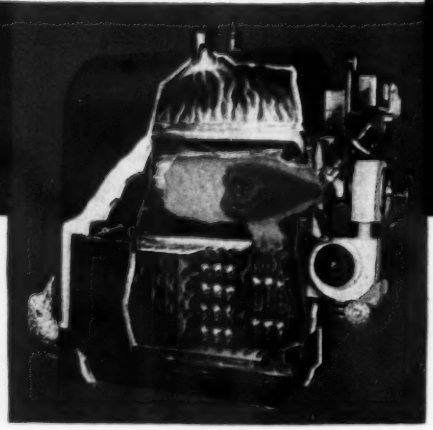
The Gar-Wood boiler is built literally up-side-down! The combustion chamber is at the top. The hot gases travel downward . . . through long, narrow flue passages . . . between flattened water tubes, baffled to cause a scrubbing action of the gases against their walls.

In this way the principle of the automobile radiator is utilized to—(1) vastly increase the area of heating surfaces exposed to the hot gases; (2) completely absorb the intense heat of the burning oil, and transfer it to the boiler water; (3) stop the loss of heat through the stack.

Built for and engineered into each other, boiler and burner form a complete, balanced heating unit . . . and its makers assume an undivided responsibility for its performance. For three years the Gar-Wood has been supplying automatic oil heat for every type of building at a cost far below that of any other type of heating unit. Write for the new Gar-Wood book.

GAR WOOD ENGINEERING CO.
4196 BELLEVUE AVE., DETROIT, MICH.

Responsible organizations now distributing through the heating trade should investigate the Gar-Wood franchise. Write to factory for details.



Gar-Wood

THE TRADE NEWS

News of Plumbing and Heating Contractors

Tentative Program Announced for Convention of H. & P. C. N. A.

The Heating and Piping Contractors National Association, having planned its forty-second convention for May 6-9 at the Kentucky hotel, Louisville, Ky., has arranged a tentative program of the proceedings, which indicates that the first day will be given over to the hearing of committee reports. The delegates on the second day will hear a program presented by the committee on trade promotion. This will include presentation of the survey of the heating industry which is now being compiled. Discussion of ways and means of trade promotion in which manufacturers, wholesalers as well as the heating and piping contractors are to take an active part is also planned.

The hearing of convention committee reports, a report on welding with a demonstration of welding and the election of officers will occupy the delegates during the morning of the third day. The convention will reconvene at 8:30 p. m., and those in attendance will occupy themselves with a sales demonstration under the direction of the Plumbing and Heating Industries Bureau. Saturday morning will be given over to the annual convention conference of secretaries and managers and a meeting of the elected board of directors.

The Heating and Piping Contractors National Association holds its annual convention as an open meeting and everyone interested in the advancement of the heating industry is cordially invited to take an active part in its sessions. The local convention committee of the Louisville association, of which M. J. Chagnard of Louisville is chairman, is planning to give everyone an example of Kentucky hospitality, and F. A. Clegg, president of the local association, says they will be prepared to make everyone enjoy themselves from the time they land in Louisville until they leave.

◆

Dates Are Set for Pennsylvania Convention

The annual convention of the Pennsylvania Master Plumbers' Association will be held at Allentown, May 18, 19 and 20. Headquarters for the convention will be at the Americus hotel. E. D. Swoyer of Allentown is president of the Pennsylvania state association, and Preston C. Lobach, also of Allentown, is state secretary. The association is making elaborate plans for a large attendance of delegates and visitors.

◆

Nebraska Convention to Be Held in Omaha

The annual convention of the Nebraska Retail Plumbers' Association will be held in Omaha on March 23 and 24. Headquarters will be at the Paxton hotel. A. J.

Members of the Educational Committee, N. A. M. P.

Harry L. Stilwell, Philadelphia, Pa.

Edward Kanney, LaPorte, Ind.

Albert B. Dibble, New Haven, Conn., chairman

Charles M. Chapman, Jacksonville, Fla.

N. M. Knudsen, Portland, Me.

Weyant of Lincoln is president of the Nebraska state association; Wray M. Scott of Omaha, vice president; J. H. Pine of Lincoln, treasurer; and E. H. Brown of Omaha, secretary.

◆

Wisconsin H. & P. C. to Hold Convention in April

The Heating and Piping Contractors Wisconsin Association will hold its annual convention at Madison on April 6 and 7, 1931, according to word just received from A. F. Bowers of Milwaukee, secretary of the association. Convention headquarters will be at the Park hotel. J. Zimmerman of Kenosha is president of the association, Paul Downey of Milwaukee, vice president. Mich. Mueller, also of Milwaukee, is sergeant-at-arms.

◆

A. S. S. E. Convention to Be Held at Richmond, Va.

The annual convention of the American Society of Sanitary Engineering will be held at Richmond, Va., September 8-11, 1931, according to word recently received from A. R. McGonegal of Washington, D. C., president of the society. Headquarters will be at the Jefferson hotel in Richmond.

◆

Boston Association Considers Group Insurance

The Boston Master Plumbers Association held its regular February meeting at the Chamber of Commerce building, in Boston, the business meeting being preceded by a moving picture showing the manufacture of closet seats. The picture was shown by F. A. LaBaw, general sales manager, and John Downey, New England representative, Standard Tank & Seat Co., Camden, N. J. The picture was followed by an analysis of the market for seats.

The business meeting was opened by President A. E. Roberts, the minutes of the last meeting being read by Secretary John Downey. The following were elected to membership in the Boston association:

J. D. Mahiney, Timothy J. McSweeney, H. G. Cornell and W. S. Howe Co., all of Somerville; Joseph Seigal, Brookline; Abe Kellum, J. Weinberg and William J. Lucas, all of Boston; Saul Tack, Roslindale; George Tack, Dorchester; Sam Barron, Abe Shleman and J. J. Connally, all of Roxbury; Benjamin Roberts, Thomas P. Travers and Andrew A. Sharpe, all of Boston; H. F. Laubenger, Cambridge, and W. E. Baker, Watertown.

P. W. Donoghue, vice president of the National Association of Master Plumbers and president of the Massachusetts state association, outlined plans for the coming state convention, which is to be held in Boston in April. Edward H. Marchant, vice president of the Boston association, suggested that all master plumbers should protect themselves with insurance against claims for damages brought up by clients. He cited several cases where his men had damaged in a slight way such articles as shoes, furniture, etc., while doing repair work in homes. In some cases, Mr. Marchant said, owners of the damaged property had made unjust claims for damages. As a result of Mr. Marchant's talk, Secretary Downey was asked to investigate the matter of group insurance for members of the association. During the meeting Mr. Downey spoke on the national seal and suggested that the members use the seal more freely. He feels its use on letter heads and other printed matter will give prestige to the contractor.

National President and Secretary Honored in Buffalo

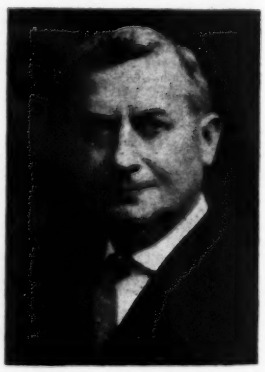
GEORGE H. DRAKE of Buffalo, N. Y., president of the National Association of Master Plumbers, and George W. Frank, also of Buffalo, secretary of the national organization, were honored with a testimonial dinner at the Hotel Statler, in their home city, on the evening of February 17. The affair, which was held under the auspices of the Plumbing and Heating Contractors and Supply Trades of Buffalo and sponsored by the Master Plumbers' Association of Buffalo, was attended by representatives of all branches of the industry, from many parts of the United States and Canada.

After an enjoyable dinner, President Drake was presented with a silver teapot. In a short address, Mr. Drake expressed his appreciation, and touched briefly on national association affairs. Secretary Frank was presented with a coffee service and responded with a short address. Both Mrs. Drake and Mrs. Frank were given beautiful bouquets of flowers. Charles E. Roesch, mayor of Buffalo, and William E. Robertson, president of the local chamber of commerce, spoke during the evening. Another speaker was F. W. Zander, manager of the Buffalo branch of Crane Co., who talked on the plumbing and heating trade. August Ebke, a member of the local master plumbers' association, was toastmaster of the evening, and delivered the address of welcome. The latter part of the program was devoted to dancing.

Mr. Ebke read telegrams of congratulations from many past presidents of the National Association of Master Plumbers, as well as from other leaders in the industry who were unable to be present. Such messages were received from the following:

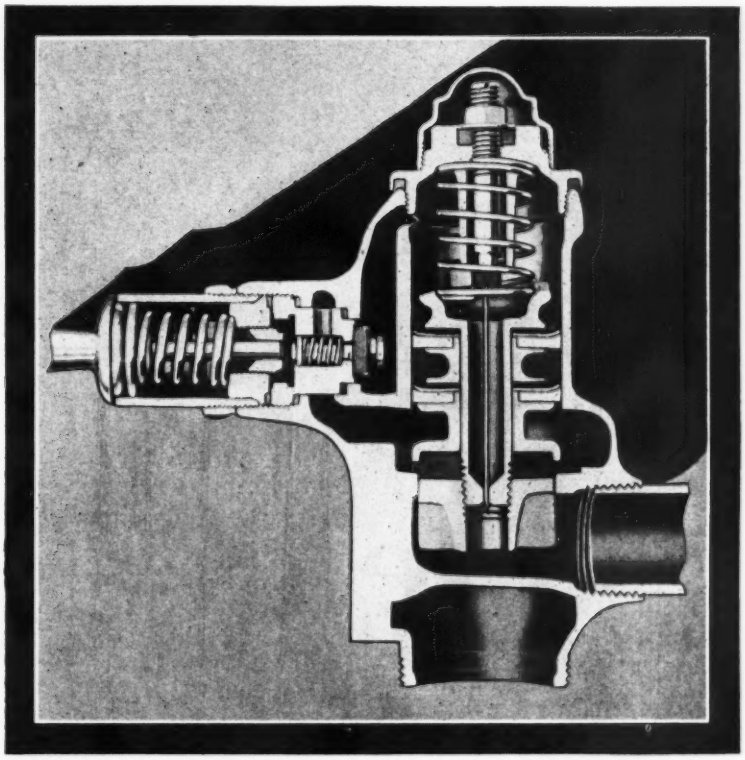
Henry E. Longley of Wilmington, N. C., national director and past national president; E. F. Roberts of Philadelphia, Pa.; William Flynn of New York City;

George H. Drake, president, N.A.M.P.



George W. Frank, secretary, N.A.M.P.

Take a look at the WORKS



THE Scovill Flush Valve is simply and strongly made to serve throughout a long lifetime of hard usage with a minimum of wear and adjustment.

Above is a cross-section of the construction. The valve is self-lubricating. The center chamber of the plunger, packed with lubricant, keeps cylinder walls smooth as glass.

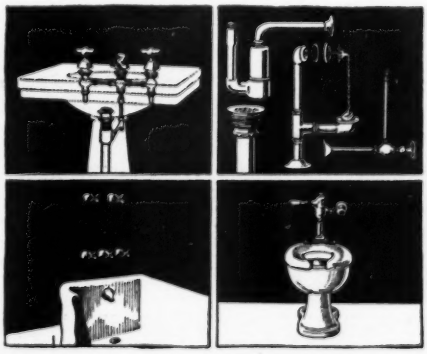
The by-pass is self-cleaning. A phosphor-bronze rod, suspended from the valve cap, extends through the by-pass and cleans it every time the valve is operated.

The length of flush can be regulated by adjustment from outside, without shutting off the water supply. Scovill Flush Valves are of the balanced type, opening with flow and pressure of water and closing against, which insures quiet, positive action under any reasonable water pressure.

Scovill Flush Valves are available in concealed as well as exposed models. All exposed parts are highly finished, nickel or chromium plated.

All Scovill brass goods are made from laboratory-tested materials selected for quality. The line is complete. Write for particulars on any of your requirements.

A COMPLETE LINE . . . . .



Scovill Flush Valves . . . Shower and Bath Fixtures . . . Tubular and Miscellaneous Plumbers' Brass Goods for General Plumbing Requirements.

SCOVILL MANUFACTURING COMPANY
PLUMBERS' BRASS GOODS DIVISION WATERVILLE, CONNECTICUT

Scovill

SHE DEALS AND CUTS IN MORE WAYS THAN ONE... *and a* Dealer profits

HER GAME of bridge sparkles. Whether it be "honors" or "spots" that mark her hand, she enjoys every moment of play. She is the modern woman—dealing with housework, too, as simply as with cards—finding it as pleasant to cut corners in her daily routine as to cut the gaily colored bridge deck.

You will find many more like her, all over the territory in which you have established your business. And, because these housewives of today *are* progressive, ready and eager to own the new labor and strength-saving devices perfected for their especial benefit, you will find them responsive to your story on Deming Water Systems.

No matter whether your prospects live on farm or in suburb, whether it be deep or shallow wells from which their water must be drawn—there is a Deming Water System that will fit each requirement—a system that, once installed, can be forgotten as it quietly and surely continues to supply water to outlets in kitchen, bath, barns and elsewhere.

Deming Dealers everywhere are telling the Deming story and cashing in on the sales that are being made with this line of efficient water systems and pumps. But there's probably room for a Deming Dealer right in your town or county—and that profitable dealership might become yours. Clip the coupon on the opposite page—send it in now, for a copy of the new Deming catalog with complete information on the Deming line of profit-making pumps.

THE DEMING COMPANY, *Salem, Ohio,* Established 1880

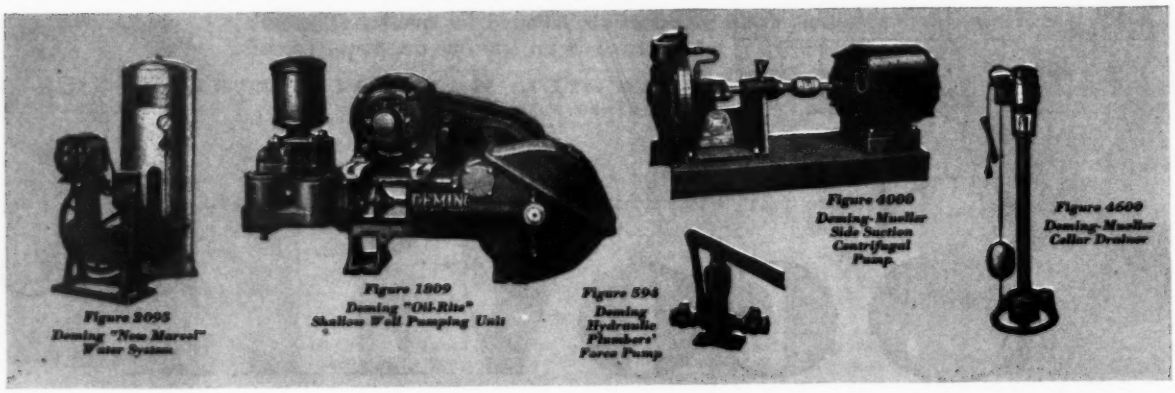


Figure 2095 Deming "New Marvel" Water System

Figure 1809 Deming "Oil-Rite" Shallow Well Pumping Unit

Figure 594 Deming Hydraulic Plumbers' Force Pump

Figure 4000 Deming-Mueller Side Suction Centrifugal Pump

Figure 4600 Deming-Mueller Cellar Drainer

THE OIL-RITE

DEEP WELL PUMPING UNIT

1

Combined Splash and Pressure System **assures thorough and continuous lubrication.**

2

Helical Cut Gears **make unit exceptionally quiet in operation.**

3

Sectional Construction **affords ease in installation and ready accessibility to moving parts.**

4

Exceptionally Large Bearing Areas **provide smooth operation and long life.**

5

Four Sizes, **6", 10", 14" and 18".**

6

Automatic Air Release.

Deming

WATER SYSTEMS

THE DEMING COMPANY, Salem, Ohio

I would like to have a copy of the new booklet describing Deming Water Systems and complete information

Signed_____

Company Name_____

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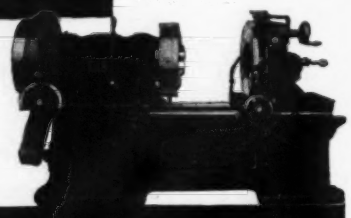
These are the Revolutionary

Features

that explain why the new Jarecki HIGH SPEED pipe threader has created a

Sensation

- One automatic self-opening die head covers complete capacity range.
- One set of B. S. S. chasers threads complete standard range—changeable only for thread or pitch variation. (In the 8-inch machine shown from 2½-inch to 8-inch without change.)
- Chasers are easily and quickly changed. Screw driver only tool required.
- Chasers held in massive holders—no bushings.
- Die-opening trigger automatically opens chasers at correct thread length.
- Cutting off and chamfering at same operation.
- Gears are steel-cut, running in oil. Hardened chrome-nickel steel wearing parts.
- Timken Roller Bearing Equipped.
- Extremely sturdy construction, based on half a century's experience in building threading machines. Exceptional reliability.



Any one of the features of the new JARECKI Pipe Threader would make it an outstanding development. . . . The combination of *all* of them makes it an epochal achievement. . . . For full information write us the size of machine in which you are interested.

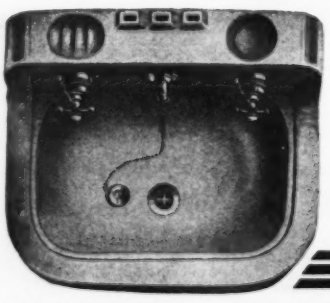
Jarecki Manufacturing Company
Erie, Pa., U. S. A.

THE CHESTER

Vitreous China Lavatory

Complete satisfaction for your customers is assured if you install The Chester Vitreous China Lavatory. It is stainless, chip, crack and craze proof, clean and neat in appearance.

Featured as it is, with a front overflow, The Chester is reduced in over all dimensions yet it has a full size, 15 inch basin.



The Chester is easy to install and ideal for the extra bathroom. Notice the built in fixture holders.

KEYSTONE POTTERY COMPANY
TRENTON, N. J.

Robert J. Barrett of Washington, D. C., national director; M. J. Kennedy of New York City; John J. Vogelpohl of Cincinnati, Ohio, past national president; Lewis R. Friend of Milwaukee, Wis., national director; Martin W. Utz of Rochester, N. Y.; William F. Hildeman of Chicago Heights, Ill., past national director; William J. Lang of Chicago, past national director; Russell G. Creviston, Crane Co., Chicago; Floyd Sharp, Jamestown, N. Y.; Charles M. Swinnerton of Los Angeles, Calif., national director; Samuel F. Wilson of Newark, N. J., past national president; Standard Sanitary Mfg. Co., Pittsburgh, Pa.

◆

March 14 Is Date for Utah Convention

The regular semi-annual convention of the Utah Association of Plumbing and Heating Contractors will be held at Salt Lake City on March 14. Included on the program will be the election of officers for the coming year and the choosing of a delegate to the National convention.

The present officers are: Ambrose H. Higham, president; Carl Blaes, vice president; Joseph F. Carthey, secretary-treasurer; Simon Gentner, sergeant-at-arms. The board of governors is composed of Val W. Palmer, Edmond G. Harris, Leo S. Holbrook, Henry G. Blumenthal, A. E. Hurd, President Higham and Vice President Blaes. W. A. Rupea is executive secretary.

◆

Milwaukeeans Study Sales Training Methods

Over two hundred members of the plumbing and heating industry in Milwaukee, Wis., including master plumbers, journeymen, apprentices and salesmen for wholesale houses, are attending a course in sales training conducted under the auspices of the Milwaukee Vocational School. The course consists of four lectures, and is given for the plumbing and heating industry free of charge. The first session was held February 6, and the other three lectures are to be given over a period of several weeks. Many members of the Milwaukee Master Plumbers' Association are among the enthusiastic students in attendance at the sessions, according to Peter King, executive secretary of the organization.

◆

District of Columbia Masters Hold Annual Party

On February 17 the Master Plumbers' Association, Inc., of the District of Columbia held its annual midwinter dinner-dance, amidst a beautiful setting, in the main ballroom of the Shoreham hotel, Washington, D. C.

Approximately four hundred guests enjoyed an evening of dining, dancing, and entertainment furnished by professional talent from the stage and radio. Throughout the dinner an organist rendered many selections, during which the guests joined in the chorus. Practically every supply house in Washington was represented. A delegation from Baltimore included Mr. and Mrs. F. C. Dorsey, Sam Houck, Mr. and Mrs. T. Thaler, Mr. and Mrs. C. R. Weaver, Mr. and Mrs. G. Wirth, Mr. and Mrs. William F. Mylander, Edward J. McCann, Mr. and Mrs. J. W. Clark, George J. Fitch, chief plumbing inspector of Baltimore, and Carroll H. Reynolds, assistant chief inspector.

R. J. Barrett, former local president and a director

PILGRIM HEATERS are *Sales Makers!*

EVERYTHING a space heater needs to make it sell you'll find in the Silent Glow Pilgrim Line.

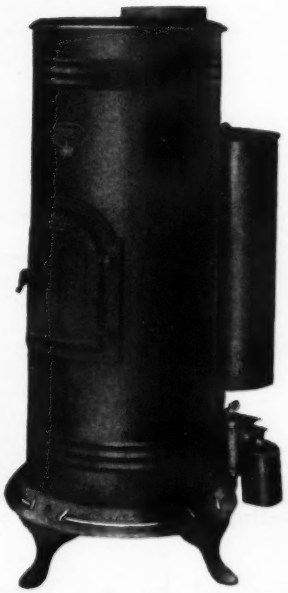
They're attractive. From the beautiful cabinet heaters with porcelain enamel, full grain natural walnut finish, to the compact and efficient garage heaters—each has eye appeal.

They're efficient. Experience in the space heating field, engineering skill, understanding of heating problems, knowledge of design, combine to make the Pilgrim Heater the outstanding unit of its kind in appearance and performance.

It's a complete line. Read the brief descriptions of the Pilgrim Heaters listed on this page and you'll see almost the whole story,—what's left out is the story of your PROFIT,—and that we'd like to discuss with you.

Pilgrim Heaters are complete units. The burner is of a design proven by years of use. They come ready to be set up on the job.

The Pilgrim Cabinet Heater—Ideal for dining and living rooms. Its natural walnut finish blends with the room furnishings. Concealed 10 gallon storage tank assures plentiful fuel supply, and steady, controlled heat.



The Pilgrim Utility Heater — For filling stations, garages, camps, offices, etc., wherever effective, controlled heat is needed. Its sturdy unit construction makes it easy to transport anywhere. Heats up to 3500 cubic feet in zero weather.

The Pilgrim Small Garage Heater—This compact little heater is just the thing for small garages, watchmen's shanties, small rooms, etc.; equipped with 2½-gallon tank, it gives constant heat without constant attention.

Pilgrim Heaters are sales makers—and profit makers, too. If you're interested in making more money send the coupon NOW.

THE SILENT GLOW OIL BURNER CORP., Hartford, Conn.

SILENT GLOW
TRADE MARK REGISTERED U.S. PAT. OFF.
OIL BURNER
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THE SILENT GLOW OIL BURNER CORP.
Hartford, Conn.

Rush me particulars on the Silent Glow Pilgrim Heaters.

Name.....

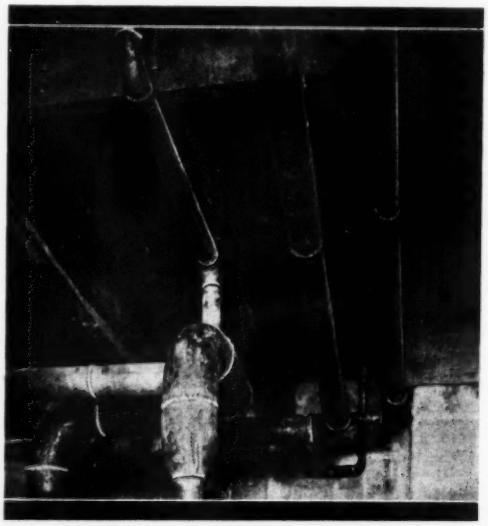
Address.....

City.....State.....

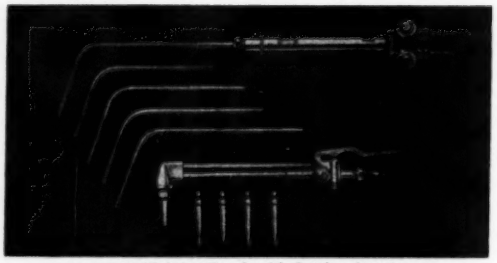
D.E.3-31

Welded Pipe Installations Make Satisfied Customers

If you are installing pipe in a small residence or in a large building you can be sure of satisfying your customers if you weld the joints with Airco Oxygen, Acetylene and Airco-Davis-Bournonville torches and accessories according to Airco standards.



Because—a joint properly oxyacetylene welded is as strong and permanently free from leaks as the pipe itself.



Airco-D-B Welding Torch with Cutting Attachment

And the conveniences and flexibility of this method of installation are unequalled by any other.

AIR REDUCTION SALES COMPANY

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Represented in Texas by Magnolia Airco Gas Products Co., Houston, Beaumont and San Antonio.

Airco Oxygen—Airco Acetylene—Airco-Davis-Bournonville
Welding & Cutting Apparatus—Supplies—National Carbide

of the National Association of Master Plumbers, was toastmaster. Following a short address of welcome, he introduced J. H. McCarthy, president of the association; Major J. C. Gotwals, engineer commissioner of the District of Columbia; A. P. Woodhead, vice president of the Gas and Electric Company of Washington; M. J. McDonald, business agent of the journeymen's local, and F. C. Dorsey, past president of the Maryland association and a former national director.

Julius E. Lewis, Sr., chairman of the banquet committee, announced that the affair had passed all expectations in attendance, and extended an invitation to all to be present next year. The committee in charge consisted of the following:

Julius E. Leins, Sr., chairman, Thomas E. Clark, David H. Alsop, Robert J. Barrett, Frank Bentley, King DeLawder, Henry C. Eslin, George R. Eberly, Elmon J. Ewing, Jules C. Flood, William T. Gary, Herbert R. Grinder, Frank A. Kerr, Fred W. Koehler, Hervey L. Lauder, J. Harry McCarthy, president, Patsy Monaco, A. R. McGonegal, J. Eugene McGolrick, William E. Owens, John G. Schlosser, Arthur Snowden, Harry A. Scroggins, Maurice R. Colbert and Samuel Tapp.

◆

Atlanta Association Gains Members in 1930

The Atlanta, Ga., Association of Master Plumbers and Heating Contractors not only held its own in the matter of membership during the past year but added six new members to its roster, and now boasts of a membership of forty-eight master plumbers and heating contractors. In addition to the regular business meetings, a luncheon is held each Wednesday.

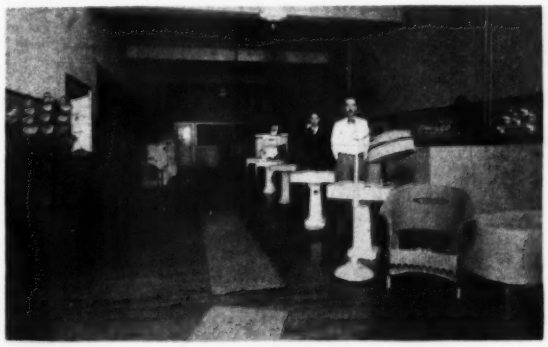
The officers of the association are: P. Lee Guest, president; L. F. McDonald, vice president; M. W. Wise, treasurer; J. W. Pickelsimer, recording secretary; and W. R. Puckett, executive secretary.

◆

Utah Masters Back Proposed Plumbing Law

The most recent city in Utah to provide for an examination and issuance of certificate of competency to both masters and journeymen is Logan, according to W. A. Rupea, secretary of the Utah state association. The ordinance provides for an examination by a board composed of the mayor, plumbing inspector and a master plumber, the latter member at the present time being Fred Baugh.

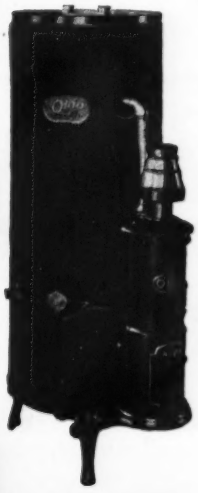
The state association now has a membership of five in Logan, making it a 100 per cent association town. It



The neat and well arranged showroom of Robert J. Leahy Co., plumbing and heating contracting firm of Bedford, Ind.

No finer heater built

THERE'S no other water heater on the market made of finer materials.... offering more features to the customer... offering greater *sales* possibilities for the plumber. Why don't YOU make money selling the OHIO Automatic? Other plumbers are cashing in.



Why not you?

Several attractive models... $50 and up.

Ample capacities — 15 to 1000 gallons.

Safety pilot control — no extra charge.

LOW first cost.

LOW operating cost.

BIG *plumbers' profit.*

We sell through the plumbing trade exclusively.

THE OHIO HEATER CO.
COLUMBUS, OHIO, U. S. A.

OHIO *Automatic* WATER HEATER

is represented on the board of governors by Val W. Palmer.

A bill is now before the legislature which would give the state board of health power to establish rules governing plumbing, drainage, sewerage and ventilation of buildings, in accordance with certain basic plumbing principles relating to a wholesome water supply, adequate flushing facilities, pipes of sufficient size, installation of boilers and other devices for storing or heating water in such manner as to eliminate dangers of explosion, proper sewer connections and drainage system, fixtures properly trapped, water and air pressure tests, etc. Under the proposed law, all communities having a public water system shall appoint a plumbing inspector, who may be a plumber or person otherwise qualified.

◆

Oranges Association Entertains Ladies

The Master Plumbers' Association of the Oranges, N. J., commemorated its thirtieth anniversary with a ladies' night and banquet on February 17 at Walnut hall, East Orange. Nearly one hundred and fifty guests were present to participate in the celebration, over which George I. Buggeln, president of the association, presided.

Among the guests formally presented were Alex F. Berg of Orange, president of the New Jersey State Association of Master Plumbers; George H. Werner, also of Orange, national director and state treasurer; Mrs. John J. Corcoran of Jersey City, president of the New Jersey state auxiliary; A. A. Taaffe of Newark, past national director; Joseph Berg of Orange, state secretary; James O. Lewis of Newark, second vice president of the New Jersey state association; George L. Bird of Elizabeth, third vice president of the state association; John J. Corcoran of Jersey City, past state president; Mrs. Ellen Daum, president of the Women's Auxiliary of the Oranges, and Mrs. Fred W. Hoffman, past president of the Auxiliary of the Oranges and national director. Each indicated pleasure at having had the opportunity of participating.

National Director Werner added to his remarks reminiscences of the past dealing with the growth in the membership of the association from its inception to the present with its roster of close to one hundred names. Mrs. Corcoran urged the women to attend the annual state meeting which is to be held in conjunction with the state convention May 26 and 27 at the Hotel Hildebrecht, Trenton, N. J. Dancing followed at the conclusion of the dinner. A. T. Brady, A. G. Trapper and T. A. Chalmers made the necessary arrangements for the affair.

◆

Maryland Masters to Banquet April 6

The Association of Master Plumbers of the State of Maryland, Inc., will hold its annual dinner-dance at The Lord Baltimore hotel, in Baltimore, on Monday, April 6. Gus Wirth is chairman of the committee arranging the affair.

◆

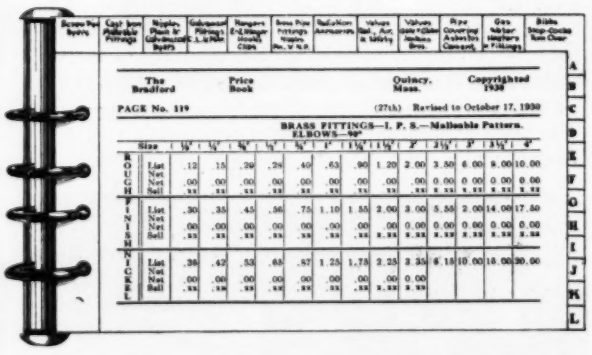
Welfare Board Gives Party in Passaic, N. J.

The Joint Welfare Board of Northern New Jersey Master Plumbers held its first annual dinner-dance in

THE BRADFORD PRICE BOOK

✓ Check with BRADFORD ✓ and be SURE

Every time you use the Bradford Price Book you will wonder how you previously did without it. It saves you time, money, your disposition, and best of all, assures you and your customers that the estimate is correct. Don't gamble for profits any longer. Make them!



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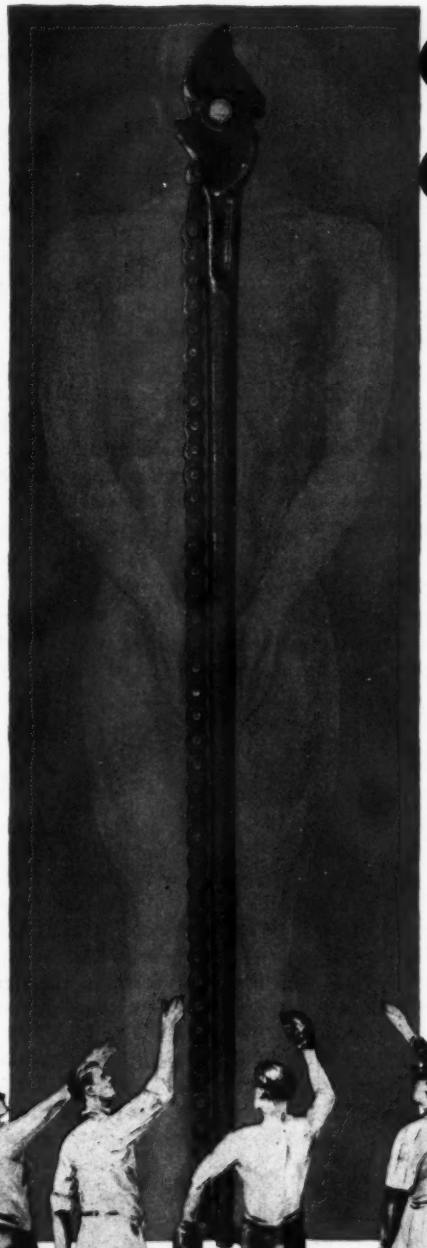
Champion of Champions »

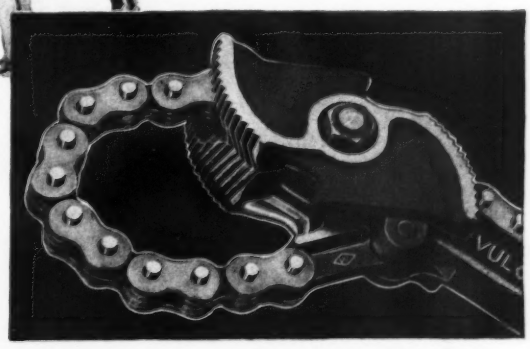


Outstanding in any company of champions is Williams' "Vulcan Superior". Every proven feature of its famous predecessors has been combined with new advantages to make this latest Williams' Tongs truly a Champion of Champions.

"Vulcan Superior" is a universal service Tongs for both pipe and fittings—TWO tools in one. It is the only Chain Tongs with reversible jaws—actually providing DOUBLE service. The "V" recess in the jaws assures quick and positive grip on fittings.

Seven sizes, with either flat link or cable chain, will handle pipe from 1/8 to 12 inches. Fully guaranteed. Ask for literature.

J. H. WILLIAMS & CO.
"The Wrench People"
75 Spring St., New York



WILLIAMS
SUPERIOR DROP-FORGED TOOLS
VULCAN
SUPERIOR
PIPE AND FITTINGS TONGS

BUY FROM YOUR DISTRIBUTOR

WESTERN WAREHOUSE, SALES OFFICE, CHICAGO
WORKS, BUFFALO, N. Y.

Passaic on Saturday evening, February 21. The ballroom in which the affair was held presented a beautiful picture with tier upon tier of colored flowers. During dinner the guests were entertained with orchestral selections and songs. William Delhagen of Paterson served as toastmaster, and Joseph Derricks, president of the organization, extended the official welcome. Solkind L. Levenson of Passaic, executive secretary of the group and chairman of the committee in charge of the party, also spoke briefly. Other speakers during the evening were George Aldous, secretary of the Passaic chamber of commerce; Roy Schleich, plumbing inspector of Clifton, and John Fitzgerald, secretary of commerce of the city of Paterson. Under the guidance of a splendid orchestra, the guests enjoyed dancing until a late hour.

Besides Mr. Levenson, the committee in charge of the party, was composed of Allan J. Blair of Passaic, T. Farinella of Hackensack, Morris Kaminetsky of Paterson, William Harms of Englewood, William Wilson of South Bergen and Frank Billowitz of Clifton.

◆

Bronx Association Holds Party

With the largest number of guests present in many years, the Bronx Master Plumbers' Association, New York City, entertained at its annual beefsteak dinner on February 7, at Ebling's Casino, in that city. Among the visitors from other associations were Joseph E. Zimmerman, newly elected president of the Queens association, with Mrs. Zimmerman, and a number of members of his organization, including John F. Rogers, secretary; L. J. Redmond, second vice president, with Mrs. Redmond; J. S. McNamara, first vice president; Mr. and Mrs. Jacob Stockinger, W. E. Foley and Jerre Harrington. Mr. and Mrs. William Metcalf of Nassau County, N. Y., were also present. From the Manhattan Association were Mr. and Mrs. John D. Cooley; Herbert Smith, executive secretary; former president Richard Anderson, Joseph E. Spellman, and Herbert Halloran, secretary. John B. Daly of the Consolidated Gas Co., New York City, was also a guest. Otto Ozab of Yonkers, N. Y., was the guest of Mr. and Mrs. Thomas Mullins.

Community songs rang out between courses. Dancing was enjoyed after dinner. E. E. Ellwood of the New York office of Youngstown Sheet and Tube Co., Youngstown, Ohio, presented motion pictures taken last year at the Children's Welfare Camp, an institution maintained by the Greater New York Master Plumbers' Association through its president, M. J. Kennedy of Brooklyn; at the Bronx master plumbers' outing, and the last national convention held at Boston. Fred Schmalstich was chairman of the committee that made arrangements for the affair. He was assisted by President Frank Habeck, S. George Arnone, secretary and treasurer; Alfred Beyrodt, C. W. Kirchhof, Anthony Platt and W. F. Ebner.

◆

Georgia's Educational Committee Meets

The educational committee of the Georgia Association of Master Plumbers and Heating Contractors met recently in the offices of the association, in the Southeastern Trust building. Matters concerning the work for the new year were outlined.

◆

Hold Dinner-Dance in Montclair, N. J.

Expressions of appreciation were heard from many of the close to two hundred guests who on February 11 attended the annual dinner-dance of the Master Plumbers' Association of Montclair, Bloomfield and Verona, N. J., held at Aiello hall, Montclair. William N. Chesnut, of Montclair, a past president of the New Jersey state association, was toastmaster. Several speakers were heard before the dancing started. Henry J. Williamson, of Montclair, president of the association, welcomed the guests, as did Mrs. Harry Burnett of Bloomfield, president of the women's auxiliary of the association. Mr. Chesnut in presenting Mrs. Burnett and Mrs. John J. Corcoran of Jersey City, president of the state women's auxiliary, who greeted the guests, later reviewed briefly the endeavors both have put forth in the development of their respective organizations as well as their accomplishments.

George L. Bird of Elizabeth, third vice president of the state association, speaking on the affairs of the association, said: "A number of those who have for many years been leaders in the affairs and promotion of or-

Some of those attending the annual beefsteak dinner of the Bronx Master Plumbers' Association, held recently at Ebling's Casino

ganization work and have given a great amount of their time to the welfare of our industry cannot go on indefinitely, and this means that younger men must be more active in association work. Our loss in Charles Zimmermann of Union City, one who gave a vast amount of his time to this work and who was taken from us on February 5, reminds us of the need about which I have just spoken."

Formally presenting Past State Presidents John J. Corcoran of Jersey City and Joseph A. Durr of Montclair, Mr. Chesnut expressed regret at the absence of National Director George H. Werner of Orange. George Brenner of that city and a former president of its association explained that Mr. Werner in his capacity of acting mayor of the city was obliged to fill that obligation during the evening.

Arrangements for the affair were completed by the following committee: Thomas Keigher, chairman; F. L. O'Brien, Paul Zeim, A. N. Kievit, Raymond Kierstead, C. J. Samuel, Arthur Sherman and H. J. Williamson, ex-officio.

◆

First of Proposed Nation-Wide Chain of Sales Schools Is Started

The first of a proposed series of nationwide sales schools conducted by local associations of plumbing and heating contractors for the purpose of giving their members instruction in up-to-date methods of merchandising was started recently at Lake Forest, Ill., with an attendance of members and employes of members of the Lake County Sanitary and Heating Engineers' Association.

This first school—the Lake Forest school in consumer selling—is a test school in which will be developed and perfected methods of instruction which will be used in subsequent schools.

The school is being conducted by Lester V. Anderson, secretary of the Lake County association, and N. S. Finney of the Plumbing and Heating Industries Bureau. From the discussions, sales demonstrations, and general routing of the school, Mr. Finney will develop a manual of sales school management which the Bureau will publish and which the National Association of Master Plumbers and the Heating and Piping Contractors National Association will distribute to those local secretaries who wish to run a sales school as an association activity.

These schools of consumer selling will be one of the important follow-up activities of local associations in cities in which Regional Management Conferences have been held.

"It is proposed to follow every Regional Management Conference with a class in consumer selling," says Joseph G. Hildebrand, secretary-manager of the Bureau, in commenting on the significance of the Lake Forest sales school. "With the first sales school actually under way, we can point to some progress in our plan of making every Regional Management Conference an educational program extending over a period of three months instead of merely one evening of concentrated education.

"The Lake Forest school is a test school. The idea of teaching the methods of selling plumbing and heating equipment in a school in which contractors and their

Permanent sales and profit opportunities

await the men who can qualify for a

MODERN COAL BURNER Dealer Franchise

IF you are as particular about the product you sell as we are particular about the dealers who represent us, we can go places—*together*.

The stoker industry is *today's industry*. There can be no more convincing proof of this than the fact that the sale of stokers for heating boilers in 1930 outstripped even the brilliant record of 1929 and is each month pushing ahead of all former marks. The reason is obvious. Stokers save dollars—thrive on the present-day eagerness to cut costs.

Modern is setting the sales pace

Into this swiftly moving industry has come a truly revolutionary stoker. It is designed down to the last bolt by engineers who have helped to make the history of combustion development—men who have designed and built stokers for world-famous super-stations. It is backed by the vast resources of one of America's greatest manufacturing groups. That is why it is setting a dazzling sales pace even for the rapidly moving stoker industry.

Super station standards

One investigation of the Modern Coal Burner will convince you that it possesses sales appeals found in no other stoker for a similar range of service. At a glance, it reveals the solidity and refinement that is always associated with precision machinery. It has unduplicated features like the varying pitch feed-screw, the uniform vertical fuel distribution, and the "fountain coal feed"—features that help to take it out of ordinary competition.

A sane engineering and sales policy

Your profits from stoker sales depend not only on your ability to sell, but upon the engineering cooperation that enables you to make satisfactory installations that build goodwill and minimize service calls. That is why the Modern Coal Burner Company offers the most elaborate program of engineering assistance and the most specific data that was ever placed before a stoker sales organization.

As a result, Modern Coal Burner users are boosters. The performance record of the Modern Coal Burner has built and is building an ever-increasing goodwill and acceptance that can be directly translated into dealer profits. It is a record that cannot fail to appeal to the dealer who wants to build a sound and growing business on a solid foundation.

The sales and advertising assistance is no less complete than the engineering assistance. It is a plan in which we work for you instead of asking you to work for us.

There are still a number of excellent dealer franchises that are available to men who can qualify—franchises that open the way to large profits. Write or wire at once for facts. Let's find out if we belong together.

MODERN COAL BURNER CO.
3735 Lincoln Ave., Chicago
Owned and operated by Peabody Coal Company

MASTER PLUMBERS CAN PROFIT

by the growing popularity of this latest Kitchen Convenience

THE thousands of home kitchens already equipped with modern electric dishwashers are daily creating new acceptance of the electric dishwashing idea—new prospects for the

CONOVER Electric
DISHWASHER SINK

It washes, rinses, dries and is self-cleansing

You make both a sales profit and an installation profit on the CONOVER Electric Dishwasher Sink. Sizes and models to meet practically every requirement. White, green, ivory or blue. Nationally advertised.

The CONOVER Sink Models are sold through Master Plumbers *exclusively*. Portable Model CONOVERS are sold only by the Electrical Trade.

Send Coupon today for further information for plumbing contractors. Apply to representative plumbing supply houses for actual quotation.

THE CONOVER COMPANY
General Offices:
Dept. K-4, 140 So. Dearborn St., Chicago, Ill.

MAIL THIS COUPON TODAY

Please send your illustrated catalog: "Making the home kitchen MODERN with Conover Electric Dishwasher Sink" and full information.

Firm Name.....

Address.....

My Name.....Title.....

employes are the students is comparatively new. We will proceed gradually so that we shall not place any materials in the hands of the officers of the two national associations until every phase of the plan has had a thorough trial.

"The Lake Forest school will continue for eight weeks. Before the end of that time we hope to have some of the first lessons available for local associations, many of whom are eager to get these schools under way. The manual which Mr. Finney will write will be cleared to local associations through the national headquarters of the two national associations—the National Association of Master Plumbers and the Heating and Piping Contractors' National Association. It is intended that local associations shall be the sponsors of the sales schools as they are of the Regional Management Conferences.

"All branches of the industries are sure to benefit by sales schools. The contractor learns modern methods of salesmanship and discovers selling points which he might otherwise overlook. He learns how to overcome the competition of other retail outlets and mail order houses.

"The wholesaler obtains more aggressive customers who will increase their sales volume and the manufacturer obtains retail outlets alert to opportunities for the modernizing of plumbing and heating equipment in residential and commercial buildings.

"A sales school will put new life into a local association. It will center the interest of members around a definite, tangible and worth while program."

Following is an outline for the eight weeks' course in consumer selling as announced by the Bureau:

At the first two meetings competent salesmen from outside the local contractor group demonstrate the sale of the product under study by selling that product in a typical sales situation before the class.

At the third and fourth meetings of the class demonstrations by outside salesmen are followed by a repeat demonstration by a contractor member of the class.

At the fifth and sixth meetings demonstrations are done entirely by members of the class.

The last two meetings will cover the principles of mailing list and prospect record, sales letter writing, and handling contacts with the buying public. Telephone demonstrations and display room sales will be given at these meetings.

The subject matter for each of the eight meetings of the class is tentatively announced as follows: 1. Selling a kitchen sink; 2. Selling radiator heating equipment for an old house and selling a certified heating installation; 3. Selling an additional bathroom; 4. Selling heating specialties and overhaul; 5. Selling a closet combination; 6. Selling a gas storage heater and selling a water softener; 7. How to find prospects; 8. How to handle customers over the telephone and in the store.

◆

Death of Charles H. Mullenberg

Charles H. Mullenberg, master plumber of Baltimore, Md., died on February 18 in the Union Memorial hospital, in that city, following an operation after an attack of acute appendicitis. Mr. Mullenberg was born in Baltimore forty-seven years ago and had been engaged in the plumbing business for the past twenty years.

Past National President John Mitchell Dies

John Mitchell, pioneer master plumber and twelfth president of the National Association of Master Plumbers, died February 22 at his home in New York City. A veteran of the Civil War, Mr. Mitchell established a plumbing business after the war at 180 West Broadway, New York City, where it continues to be operated by one of his three sons who survive him. Born August 15, 1843, he enlisted in the Corcoran Legion as a private at the outbreak of the war. Shortly afterward he was captured by the confederate forces and held in a southern prison camp, from which he escaped with four comrades, rejoining his regiment at Ream's Station, Va., after having been reported dead by the War Department. Cited for bravery in action, he was awarded the brevet rank of major and at the close of the war was acting colonel in command of the 170th New York Volunteers.

In 1885 and later in 1894 he was president of the Manhattan Association of Master Plumbers and at his death was an honorary member of that organization. He was also a member of Hamilton Post G. A. R. Besides his three sons, three daughters survive. Funeral services were held February 25 at all Saints Roman Catholic Church.

A large number of Major Mitchell's old friends in the plumbing industry were present. Among them were Past National Presidents Samuel F. Wilson of Newark, N. J.; Frank J. Fee and Frank B. Lasette, both of New York City; National Director Maney J. Feeney of Philadelphia, as emissary of George H. Drake, president of the National Association of Master Plumbers; State Vice President William Wolff of Brooklyn, representing the New York state association; Thomas J. Tuomey; Jere L. Murphy; Mr. and Mrs. T. P. McLoughlin; John D. Cooley, president of the Manhattan Association, with Mrs. Cooley; Harry Sugarman, and Fred Schmalstich, delegate-at-large of zone 2 New York state association, both of the Bronx association; Frank Reynolds; I. J. Brown; T. J. Cummins; Richard Anderson, vice chairman, board of governors, Manhattan association, and Joseph Crotty, vice president of Central Foundry Co., New York City.

◆

Rural Plumbing Installations Increase in Wisconsin

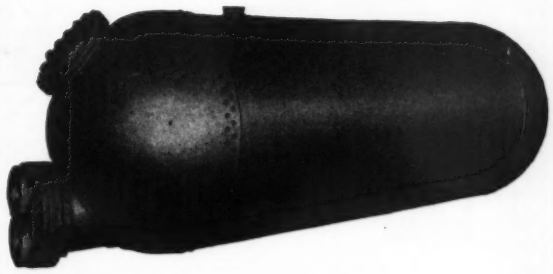
Frank R. King, director of the bureau of plumbing and domestic sanitary engineering, state board of health, Madison, Wis., reports that there were more installations of plumbing systems in rural Wisconsin homes during the past two years than during any previous two-year period. The modernization movement is largely responsible for this, according to Mr. King.

◆

Will Receive Refunds

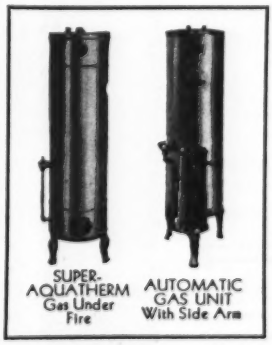
The city council of Oakland, Cal., has amended the plumbing ordinance of that city to permit master plumbers to receive a refund on license fee deposits after all money owed the city is paid. The ordinance previously prevented the master plumbers from getting refunds.

This will Interest EVERY PURCHASER of Hot Water Boilers!



THE fact that copper is the ideal metal for hot water boilers is accepted by everyone. Its almost entire freedom from corrosion under all conditions of water supply gives it a life far exceeding that of the ferrous metals. Even at the normal differential in price between copper and iron or steel, copper boilers are much cheaper in the long run due to their longer life and lower upkeep. Today, however, the differential in price between copper and steel or galvanized iron is so much less than normal that the purchaser is short sighted indeed who neglects this exceptional opportunity to save money by specifying the superior copper boilers for new work or replacements.

The Dahlquist Manufacturing Company confines its entire hot water boiler production to copper, and manufactures units in this metal from the smallest range boiler to the largest industrial tanks as illustrated above.



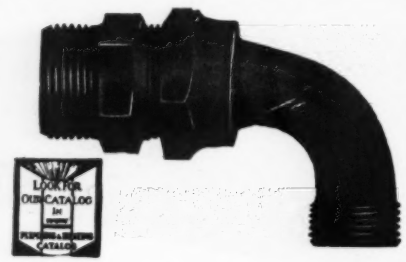
The Dahlquist Company has introduced and patented many exclusive technical improvements which without extra cost to the user have greatly increased the general efficiency of the boilers. The famous Dahlquist Aquatherm and the new Turbo-Aquatherm can be had only in Dahlquist copper boilers and full information will be gladly sent to those interested.

Dahlquist Mfg. Co.

A, 2nd & West 3rd Streets So. Boston, Mass.

PRODUCTS BRASS TRENTON

BUY FOR PROFIT



Selling for profit is not the only problem. You've got to buy for profit too. This is just what you do when you stock up with Trenton Brass Products. They give you a neat profit on sale and installation and another in customer good-will and satisfaction.

TRENTON BRASS & MACHINE CO.
Trenton, New Jersey
Represented by ROLLIN C. WILSON
7 E. 42nd St., New York, N.Y., 261 Franklin St., Boston, Mass.
427 N. Broad Street, Elizabeth, New Jersey

Keep out of "Hot Water"

by selling and installing boilers with a 35-year record of keeping users well satisfied—and supplied with plenty of it.

PENNSYLVANIA
STANDARD
RANGE BOILERS

with built-in quality and workmanship found only in the highest grade boilers—but priced to meet the stiffest competition. Made in both Rivet and Weld and All-Welded construction.

Standard Grade guaranteed up to 85 lbs. working pressure and Extra Heavy up to 150 lbs.

Buy them from Your Jobber

Detail Showing Rivet and Weld Joint

PENNSYLVANIA
RANGE BOILER CO.
24th and Washington Ave. Philadelphia, Pa.

New York H. & P. C. Set Date for Convention

The Heating and Piping Contractors' New York State Association has arranged its annual convention for March 23, at the Onondaga hotel, Syracuse, N. Y. In addition to short business routine sessions the plans now about completed include talks by several prominent speakers. William J. Olvany, president of the association, and Secretary Robert B. Miller expect a large attendance.

38 Years Old—Plumbing and Heating System Is Still Good

A few days ago Edwin D. Hornbrook, Kansas City, Mo., formerly president of the National Association of Master Plumbers and for many years one of its leaders, had the pleasure of learning that a plumbing and heating job which he did in 1893 was still performing first class service in 1931—38 years later. This word came to Mr. Hornbrook in the following letter:

"In doing some alteration work on the Union Depot Building, this city, for the Northern Pacific Terminal Company, this last year, we had occasion to remove some of the plumbing work which your firm installed thirty-seven years ago, and in doing so the enclosed name plate was saved from some of the fixtures removed.

"In view of the fact that this work, we believe, was installed in 1894, we thought it might be of interest to know that the work which you did then is still serving its purpose, and the plumbing was only remodeled in making the necessary alterations in the station."

(Signed) George W. Kendall,
Pres. Kendall Heating Co.
Portland, Ore.

Welding Society Formed in St. Louis

At a recent meeting in the Forest Park hotel, St. Louis, Mo., the St. Louis Welding Society was formed and officers elected. This society, which consists of 65 charter members representing 26 companies in St. Louis, East St. Louis, and Madison, Ill., was the outgrowth of monthly meetings on the subject of welding, conducted by the Hill Equipment Engineering Co.

The following were elected officers: President, E. P. Barnes of Moloney Electric Co.; vice president, W. D. Patterson, American School of Welding; secretary-treasurer, Basil N. Osmin, Hill Equipment Engineering Co. Directors: F. J. Feldhaus, Heine Boiler Co.; George Frankey, Alpha Tank & Sheet Metal Works; A. V. Fausek, Modern Engineering Co.; Lyman Goodin, Midwest Piping & Supply Co.; F. Tidwell, John Nooter Boiler Works, and A. E. Eidson, St. Louis Structural Steel Co.

Future plans of the society, though not definitely announced, include observation and educational tours through St. Louis factories who utilize welding processes in the fabrication of their products. Also, lectures by men prominent in the welding industry.

Bureau's Board Launches Campaign for New Members

Joseph G. Hildebrand, secretary - manager, Plumbing and Heating Industries Bureau

AN AGGRESSIVE campaign to secure a greater number of active supporters was decided upon at the annual meeting of the board of directors of the Plumbing and Heating Industries Bureau at the Palmer House in Chicago on February 23. Too many wholesalers and manufacturers in the plumbing and heating industry are enjoying the benefits of the work of the Bureau while withholding their financial support, the board declared.

Those wholesalers and manufacturers who want the benefits of Bureau membership but don't wish to help carry the financial responsibility were likened by George H. Drake, president of the bureau and president of the National Association of Master Plumbers, to dead-head passengers on a street car who are glad to take the ride but won't pay their fare.

The report of Joseph G. Hildebrand, secretary-manager of the Bureau, showed that 164 firms gave their financial support to the organization in 1930.

"The work of the bureau is by necessity industry-wide," said a prominent member of the board of directors. "The tremendous amount of favorable publicity for plumbing and heating which the bureau has obtained in newspapers and magazines from coast to coast and in every state, benefits wholesalers and manufacturers everywhere.

"The Regional Management Conferences benefit the whole industry. Among the eight thousand contractors who are using the Bureau's bookkeeping system are doubtless many who are customers of wholesalers who are not supporting the Bureau although they are getting the benefit of this very important Bureau activity.

"The whole situation is unfair to those manufacturers and wholesalers who have for years given their financial aid to the Bureau. It is not in accordance with the American spirit of fair-play to expect the other fellow to pay for something that is of direct benefit to you."

In view of this condition, the board of directors decided upon the following course of action:

1. Education of the non-member wholesalers and manufacturers in what the Bureau is doing for them and for the industries;

2. An aggressive campaign of solicitation by the contractor, wholesaler, and manufacturer members of the board themselves.

Regarding the need for "selling the Bureau to the industry," President Drake said:

"If only all manufacturers and wholesalers could sit in at a meeting of the Board of Directors and hear the story of the Bureau activities as we have heard it today, there would be no question about wholehearted financial support from those firms who for years have been indifferent to the solicitation of the Bureau's officers.

"Inasmuch as the Bureau is the only organization in the industry that is composed of all three branches —contractors, wholesalers, and manufacturers—those firms who sincerely believe in the present method of distribution should give tangible evidence of their convictions by supporting the Bureau in its endeavor to carry out its two objects, education of the contractor and education of the consumer."

Another member of the board said: "We are going to make an effort, first, to show the non-member what the Bureau is doing for him, and second, in case he refuses to be convinced that he should aid in the Bureau's industry-wide educational program, we will show him what some of the disadvantages of non-membership are."

Members of the board expressed their approval of the activities as carried on during 1930 and voted in favor of continuing and conservatively expanding these activities in 1931. It was the opinion of all members of the board that sales promotion work is most effective in times of declining business volume.

Consequently, the board members feel that the program should be enlarged, the budget expanded, and an effort made to enlist the financial support of all wholesalers and manufacturers in the United States.

Mr. Hildebrand's report to the board on the work of the Bureau during 1930 showed an active organization concentrating its attention on a few profitable activities with direct cash benefit to the industries. He said twenty-two Regional Management Conferences, with a total attendance of 6,450 persons, have been held since July 1, 1930, and that these conferences have been distributed throughout 11 different states in the middle west. He explained that the casts used in the plays are available for participation in future programs and can at almost any time be revived. Continuing, Mr. Hildebrand said:

"The available bookings for the next three months are few, and our schedule is practically filled. Present arrangements call for the training of four, and possibly five, new casts, two of which are already in training—one in Chicago and one in Philadelphia. A cast will be trained in Boston for the Massachusetts state convention, and one in Louisville for the convention of the Heating and Piping Contractors National Association.

Norman J. Radder, director of publicity, reported

IT WILL PAY YOU to talk this over with YOUR POWER COMPANY

In communities where there is a special rate for water heating . . . there is a golden opportunity for experts in household plumbing.

The convenience and safety of electric water heating requires no selling on your part. The installation of a Westinghouse ElectricWater Heater is simple . . . and profitable. The efficiency and satisfaction which these heaters insure will widen your circle of customers.

Don't pass up any opportunity to profit by the increasing use of electricity for water heating. Get in touch with the Commercial Manager of your local power company. Let him tell you what his plans are and how you can cooperate to your own advantage. Or, if you want additional information on the complete line of Westinghouse Electric Water Heaters, just mail the coupon below to the Merchandising Department, Westinghouse Electric & Manufacturing Company, Mansfield, Ohio.

Merchandising Department,
Westinghouse Electric & Manufacturing Co.,
Mansfield, Ohio.

I am interested in learning more about the opportunity for profits in the sale of Westinghouse Electric Water Heaters.

Name.....

Address.....

City.....

D.E. 3-7-31

Westinghouse

ELECTRIC WATER HEATERS

on the large amount of free publicity which the Bureau has obtained for the industry in newspapers and magazines. Mr. Radder said in part:

"Prior to 1930 the plumbing and heating industry had been content with whatever news and comment about plumbing and heating the newspapers and magazines happened to print. Much of what was printed was accurate; some of it harmful and misleading. In brief, before 1930 the public was not getting our story as we wished it to be told.

"January, 1930, saw a change. At that time we began to take the initiative in suggesting to the newspapers and magazines what we believe to be the news about the industry. Clippings which came in showed that the newspapers have printed practically every article which we sent them during 1930.

"During 1930, newspapers printed 66,244 inches of Bureau-prepared articles. This total of 66,244 inches is equivalent to 473 pages of an average size newspaper. The articles about plumbing and heating written during 1930 by the Bureau were placed by the daily newspapers before 227,873,000 readers—a circulation equivalent to twice the population of the United States.

Progress in the assembling of material for the sales schools to be conducted by local associations following the holding of Regional Management Conferences was reported to the board by Nathaniel S. Finney, editor of the Plumbing and Heating Industries Bulletin.

Mr. Finney described the experimental sales school now being conducted in co-operation with the Lake County Sanitary and Heating Engineers Association at Lake Forest, Ill.

"Experimental work being done in the Lake County school is to be the foundation of an instructor's manual and students material for all associations who wish to conduct sales schools," Mr. Finney said. "All of this material will be cleared through the two national associations.

"It is anticipated that material for the sales schools on a national basis will be available before May 1."

◆

Join Boston Master Plumbers' Association

The Plumbers' Betterment Association of Boston, Mass., held a special meeting on the evening of February 5 to consider as a body the advisability of joining the Boston Master Plumbers' Association.

Abe Shleman, president of the Plumbers' Betterment Association, recited the reasons back of the formation of the association a few years ago. He pointed out that the purposes and aims of the association which he heads are identical with those of Boston Master Plumbers' Association, adding that to his way of thinking it would be a distinct advantage to join hands with the latter group. S. Connally, vice president of the Betterment association, and Edward Silverstein, a member of both associations, pointed out the advantages that would result from membership in the Boston Master Plumbers' Association.

It was explained by President Shleman that according to the by-laws of the Boston Master Plumbers' Association the members of the Betterment association could not join the Boston association as a body, but each member

must make individual application for admission.

At the meeting, applications for membership in the Boston association were filed by Abe Shleman, Abe Kellem, J. Weinberg, William J. Lucas, S. Connally, George Tack, Samuel Barron, Saul Tack, Benjamin Roberts and Joseph Seigal.

Representing the Boston association at the meeting were: A. E. Roberts, president; P. W. Donoghue, vice president of the National Association of Master Plumbers; John Downey, secretary; J. Preston Perham, financial secretary; and J. G. Gillespie, president of the Massachusetts Sanitary Club and a past president of the Massachusetts state association.

◆

Milwaukee Plumbers Beat Chicago in Bowling Match

Bowlers from the Milwaukee Master Plumbers' Association journeyed down to Chicago on the afternoon of February 26, as they have been doing each year for sixteen years, and engaged a team of the North and West Side Master Plumbers' Pleasure Club of Chicago in a bowling match. Result—Milwaukee, 2582; Chicago, 2383.

According to the Milwaukee representatives, victory is becoming rather a habit with them, and they prophesy that the result will be the same when the Chicago crowd goes to Milwaukee for a return engagement some time within the next thirty days. Both teams and their adherents, however, always come out ahead on the score of good fellowship and good sport, so the loss of the match itself is not felt too keenly. The details of the games follow:

Milwaukee

Player	1st game	2nd game	3rd game	Total
P. Klein	135	155	160	450
S. Derezynski	229	163	143	535
W. Holheuzer	239	178	152	569
A. Hoffmann	158	176	163	497
G. Wussow	173	192	166	531
	934	864	784	2582

Chicago

Player	1st game	2nd game	3rd game	Total
R. Nelson	167	169	178	514
A. Grosch	135	175	167	477
H. Diedesch	182	121	145	448
E. Wagner	145	165	149	459
P. Larson	143	168	174	485
	772	798	813	2383

After the games, the crowd, including approximately forty from Milwaukee and twice that number from Chicago, adjourned to a nearby restaurant, where dinner was served and several vaudeville acts were offered for entertainment. At the dinner, prizes were awarded to Messrs. Holheuzer, Derezynski, Wussow and Heffling of Milwaukee and M. Nelson of Chicago.

Well-known visitors from Milwaukee were Lewis R. Friend, president of the Wisconsin Master Plumbers' Association; Walter Dusold, president of the Milwaukee Master Plumbers' Association; F. C. Kuetemeyer, past president of the Wisconsin association; Joseph Brah, Charles Pelunek, Walter Tesch and others.

Robert J. Nelson, president of the Chicago club, welcomed the Milwaukee men and presided at the dinner. Henry Swade was chairman of the entertainment committee.

Sewer Augers

FLEXIBLE MUSIC SPRING WIRE
SEWER AND PIPE AUGERS

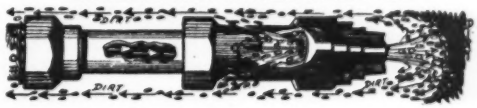
Use either end

Coleman manufactures all kinds of **Closet, Sewer** and **Drain** Cleaning **Augers**
All sizes
All lengths

The strongest, most perfect and completely equipped flexible pipe and sewer augers on the market.

If you want the Best order this **Music** Spring **wire.**

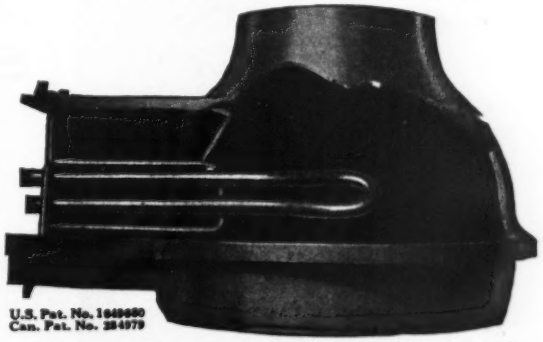
COLEMAN'S WATER AUGER



Water Auger, for drilling holes for pipe, also for **washing** out all kinds of Sewer Drains.
Send for new catalog describing our many **Cleaning Tools.**

ALLAN J. COLEMAN
208 N. Wabash Ave. :: CHICAGO

The GLOBE Sizzler
THE NO-POCKET, ONE-PIECE FURNACE COIL



Customers Like The GLOBE SIZZLER; IT NEVER CLOGS OR HAMMERS

THE Globe Sizzler actually lessens clogging, liming-up and hammering. This is one heating coil that you can recommend and install with no fear of "kick-backs" later.

The one-piece Globe Sizzler contains no pockets as are found in all return-bend or other one-piece heating coils. This patented and exclusive feature of the Sizzler assures free, noiseless flow of water, always in a horizontal and upward direction.

The Globe Sizzler costs no more than making up coils, installation is quicker and you get more for the finished job. That's why it puts real profits into your furnace coil business. Better write today for details.

GLOBE MACHINERY & SUPPLY COMPANY
227 W. Court Ave Des Moines, Iowa

The Globe Sizzler is made in different lengths to fit all makes of furnaces. It comes to you ready for installation, each coil packed in an individual carton.

Northern California Masters Unite for Further Progress

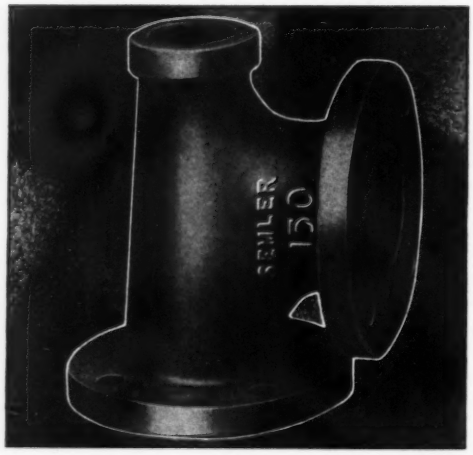
A big forward step in organization, one that holds out the promise of greater progress for the Northern California master plumber, was taken in San Francisco on the evening of January 31 when the Federation of Merchant Plumbers of Northern California was organized, officers elected and constitution and by-laws adopted.

Many men prominent in the affairs of the national, state and local associations took an active part in the formation of the new body. As evidence of the widespread interest in the organization, officers and members of local associations were present from San Francisco, Oakland, Berkeley, Sacramento, Richmond, Walnut Creek, Martinez, Palo Alto, Danville, Fresno, and other communities. The chairman of the evening was J. V. Young, president of the local and vice president of the state association. "Our business needs more co-operation," were Mr. Young's opening words. Sounding the keynote of the meeting, he continued, "We feel there is a need for an organization in this part of the state similar to that functioning in the southern part of the state. I was tremendously impressed, on a recent visit to Southern California, with their achievements in this direction. Theirs is a truly representative group, and a powerful one; and I am convinced that our best interests would be served by the formation of a like body in Northern California."

Speaking in support of the proposed organization, State President Claude Hickman of San Pedro said "If we can believe only half of what our country's business leaders are telling us is bound to come, we must be ready for it." Making it clear that the value of harmony and confidence in business cannot be over-estimated, Mr. Hickman then turned to such evils as broken promises, unethical practices, unprofitable business, which evils in large measure will be eliminated through the medium of the proposed federation. "It is within our power, even of those rights here in this room, not only to improve our present opportunities, but to lay the groundwork of a structure that will enable us to realize on the real opportunities just ahead."

Alexander Coleman

Charles M. Swinnerton of Los Angeles, a director of the National Association of Master Plumbers, explained the purposes, organization and functioning of the Federation of Merchant Plumbers of Southern California — of which he was the first president — and upon the lines of which the new federation is being patterned. Mr. Swinnerton emphasized at the outset that the federation idea embodies no intention of being in any sense a legislative organization, nor is it intended in any way to detract from association activities. "Our federation in the South," he went on, "was founded and is functioning with the objective of bringing in outsiders and conveying



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SPRINKLER FITTINGS

You are assured of a quick approval on your sprinkler job when you use Semler SURE-FIT Sprinkler Fittings. They are approved by the Underwriters' Laboratories. They undergo rigid tests before leaving our plant so that you are guaranteed performance and complete satisfaction.

You can get them from your leading jobber.

Warehouse:
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Long Island City,
New York.

Telephone
Stillwell 2912

SURE-FIT FITTINGS
SEMLER
STEAM FLANGED SPRINKLER DRAINAGE

SEMLER COMPANY
JEANNETTE-PA.
SURE FIT FITTINGS

to these men that the master plumbers have an organization that is numerically strong. Equally important is the idea of promoting a unification of sentiment looking toward concerted action in which all branches of the industry are represented."

In connection with the federation aim of making the public plumbing-conscious, Mr. Swinnerton pointed to the program adopted by the automobile industry in which every member, no matter how humble his position, loses no opportunity to urge the necessity for autos—even to the point of preaching the "one more car" gospel. "Plainly, we cannot hope to make the public consider having a new bathroom every year; but we can travel far, as a body, in the direction of educating the public toward thinking of more and better sanitary equipment." The proposed federation, it was pointed out, would be particularly advantageous to the man from the smaller community, in that not only will he be impressed by the strength of his own industry and thereby encouraged to exert a greater merchandising effort in his home district, but he will also receive the benefit of valuable sales helps applicable to his own business.

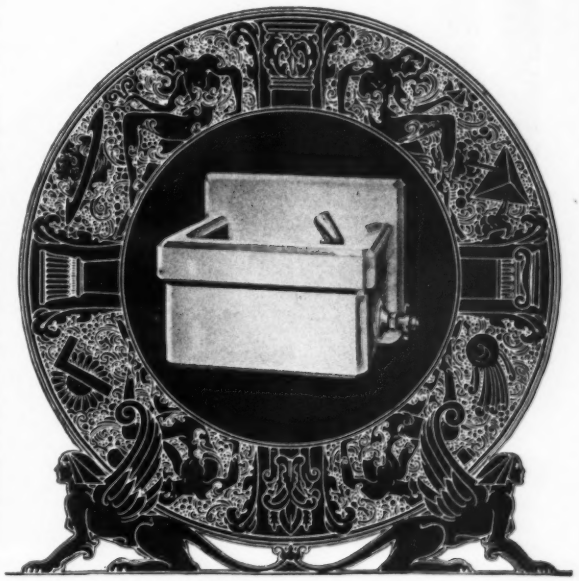
Again emphasizing that the projected organization in Northern California was intended in no way to interfere with one's membership in his local association, Mr. Swinnerton continued: "The federation is essentially and fundamentally an auxiliary upon which to build a substantial foundation for the industry at large." He then explained how interest is stimulated and maintained through the expedient of federation meetings.

Mr. Swinnerton then turned his attention to certain details of organization with which the proposed body would be concerned.. Concluding with the statement: "You have the potential members, you have a logical field of operations, and you have the leaders," he proposed the name of Alexander Coleman of San Francisco, past secretary of the National Association of Master Plumbers, for the office of president. Receiving the definite assurance of those present that it was the sense of the meeting that plans proceed immediately toward the formation of the Federation of Merchant Plumbers of Northern California, Mr. Coleman accepted the presidency. Harry G. Newman of Oakland, past president of the California state association, was chosen vice president. In both cases the choice was unanimous.

In his brief speech of acceptance Mr. Coleman said in part: "I think there is a very real opportunity for the sort of work contemplated to be undertaken by our new organization, my reason for thinking so being due to the great changes that have taken place and are taking place in the plumbing and heating industry during recent years.

At the conclusion of the meeting Mr. Coleman announced that he had selected Frank Mauzy of Walnut Creek for the post of secretary.

At a second meeting at Master Plumbers' hall, San Francisco, on the evening of February 13, J. B. Hawley of Sacramento was elected treasurer, and the following were chosen to serve as directors: Charles Merritt of San Jose, Robert Duncan, Jr., of Oakland, and J. V. Young of San Francisco. The full board will consist of these men in addition to President Coleman, Vice President Newman and Secretary Mauzey.



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Wisconsin Short Proves Highly

Some of those attending the short course at Madison, Wis.

A TEN-DAY short course for master plumbers, plumbing inspectors, instructors and foreman plumbers, was held at the University of Wisconsin for the first time from February 9 to 20, and constituted one more definite step in the development of the plumbing educational movement in Wisconsin. It was sponsored by the department of hydraulic and sanitary engineering of the college of engineering in co-operation with the Wisconsin Master Plumbers' Association, the local associations, the state vocational board and the director of domestic sanitary engineering.

There is no question but that the course was very successful. At the banquet given toward the end of the ten-day period, ninety-eight were in attendance incidentally. The class members took charge of this part of the program which was held at the Loraine Hotel in Madison. Forty-two were registered for the entire ten days and many additional ones were present for special lectures and short periods.

Proof of the interest in the work was in the attendance. Classes were called at eight o'clock in the morning. When the bell sounded at that time, all of the men were in their places with notebooks before them, ready to give serious attention to the business of the day. Not only did the sessions take up at an early hour but they were carried through until late in the evening.

The registration is not entirely indicative of the number benefited by the short course. Many were there not as individuals but as representatives of plumbing contracting organizations and groups of firms, their purpose being to assimilate as much information as possible and take it back to relay it to their associates who were not able to leave their work. Voluminous notes were taken. Questions were asked, and if a point was not clear, it was reconsidered so that all had an opportunity to gain a complete understanding of the several subjects.

That part of the course which was of most interest to the men was the laboratory work. Those in charge of the work had spent several months in preparation for the students so that all of the laboratory demon-

I do not believe that it would be advisable again to extend a future short course to ten days. However, I do not believe that it should be shortened to only three days.

From my observations, the ideal length of course would be about one week and it should provide intensive instruction.

I believe firmly in the benefit of laboratory work and very clear demonstrations. The general program was to have three hours of lecture work in the mornings with laboratory work in the afternoons and lectures of an interesting and instructive character, given by an experienced lecturer, in the evenings. We worked on the experimental laboratory set-ups for several months in advance of the course to insure their demonstrating most clearly the various principles involved.

F. M. DAWSON

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THE COURSE WAS GIVEN AS AN EXPERIMENT AND PROVED OF MUCH PRACTICAL VALUE TO ALL IN PLUMBING AND RELATED INDUSTRIES. IT WILL BECOME A DEFINITE FIXTURE IN OUR PROGRAM OF PLUMBING EDUCATION.
FRANK R KING.

Course Successful

strations might be most clear in giving them a correct and comprehensive understanding of the principles involved, in as short a time as possible. This experimental work was divided up into six sections to facilitate the handling of the members in small groups during each of the laboratory periods.

According to Prof. F. M. Dawson, who was in charge of the work, most interest was evidenced in the demonstration showing the possibility of siphoning water closets. In this experiment, the equivalent of a five-story plumbing stack was set up and the tests were conducted under what approximated actual working conditions.

The subject which commanded the second greatest amount of attention was that of water hammer. The reader will recall that in the February 7 issue of DOMESTIC ENGINEERING there appeared an article by L. H. Kessler and Henry Pommerenck under the heading of "What to Do When Water Hammer Is Encountered." The article was based upon original research carried on by the authors at the university and in the field under actual practice conditions, and was distributed to all the men present in the form of a reprint. It was then discussed in the classroom so that when the student entered the laboratory to consider water hammer, he was acquainted with what he would encounter. The water hammer demonstration took him through the various original research tests so that each point in the article was definitely and clearly illustrated. To make it most valuable to the individual, each student was required in turn, to operate the test apparatus for the determination of water hammer. The equipment is shown on pages 66 and 68 of the February 7 issue.

In addition to making the tests devised by Messrs. Kessler and Pommerenck, the students applied what they had learned in actual practice in the way of setting up typical water supply piping resulting in water hammer and investigated conditions resulting with the water hammer recording instrument. They even went so far as to purchase, for test purposes only, equipment designed to eliminate water hammer.

It was found that air chambers less than 24 in. in height are of practically no value in eliminating water hammer. Also, the elimination of noise is no proof that water hammer has been eliminated. Water hammer pressures over 500 pounds per square inch were recorded.

Possibly the third most interesting set of experiments had to do with a comparison of the flow through valves of one size. Here, a number of different types of valves and faucets were connected to a pipe line and each, in turn, was tested for its discharge. Another experiment of this

From an inspector's viewpoint the presentation of fundamental facts relating to hydraulics, capacities of pipes, and composition of materials used in plumbing and drainage systems was of very great interest. The tests made in connection with closet flush valves, traps, ejectors, water hammer, capacities and designs of different types of pumps and air lift systems, chemistry as it relates to water and sewage, pipe welding with detailed explanations as to the changes which occur in the several kinds of pipe when heat is applied, and water analysis will be of incalculable value in carrying on a plumbing inspector's duties.

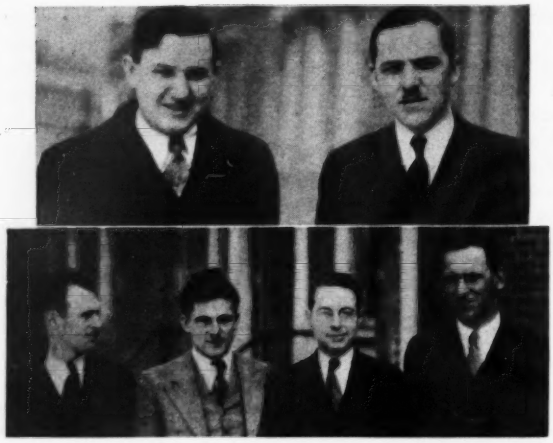
JOHN H. OWENS

The outstanding features and those having perhaps the most value in my estimation were, first, the experiments and lectures connected with the solving of water hammer problems; second, the experiments relating to the back-siphonage of flush valves and plumbing fixtures; and third, the lectures and data relating to the purification of sewage, water supply and swimming pools.

While each feature of the course was of true merit and almost equally instructive and interesting, I find that the above named units in their order had, perhaps, the greatest appeal for me personally. Professor Dawson and his colleagues should be highly complimented for the efforts put forth by them in our behalf.

LEWIS J. ERON

Picture taken at the banquet on one of the last days of the short course held recently at Madison



Top row: R. A. Ragatz and L. H. Kessler; Bottom row: J. A. Onkey, S. E. Kotz, A. T. Lenz and H. W. Ruf, all of the University of Wisconsin, who served on the teaching staff of the short course

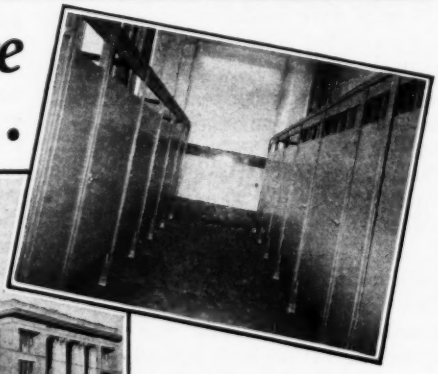
third series had to do with the friction in pipes. One of the set-ups consisted of several 16-ft. lengths of different kinds of pipe each being the same nominal diameter. The results observed by the students were surprising to some.

Traps were tested. One set-up consisted of a number of basins, each connected with a different one of a number of typical traps. They were unvented and the purpose was to investigate the siphonage tendencies. Another basin unvented and with an ordinary P-trap was connected to a plumbing stack of considerable height. A section of the stack was replaced with a glass tube so that the students were able to observe what occurred on the inside. A flow of water in the stack from an overhead tank was started to correspond to the discharge of an upper fixture. The plug was set in the basin which was filled with water. With the water flowing in the stack, the basin was discharged into it and the result was that the water in the trap was siphoned with considerable gurgling even after the water in the trap was removed. It may be of interest to note that the stack did not appear to be running full.

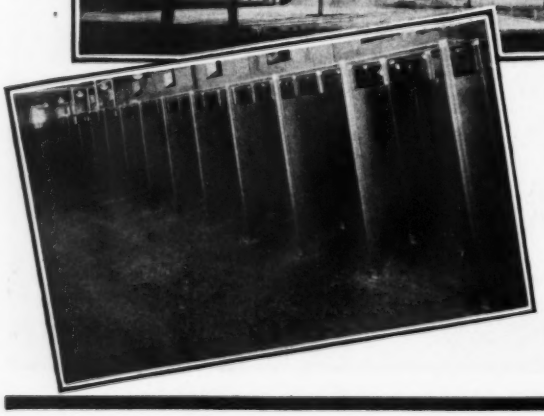
Another interesting experiment was designed to illustrate the necessity for carefully reaming pipe.

Henry Pommerenck of the Southern Wisconsin vocational education circuit who was given credit for starting the short course, and F. M. Dawson of the department of hydraulic and sanitary engineering of the university, who was in charge

ALUMINUM.... *the toilet partition de luxe...*



All Aluminum Sanymetal Toilet and Shower installations in the new Elmer L. Meyers High School, Wilkes-Barre, Pa.



ALL the recognized advantages of Sanymetal Toilet and Shower Partitions *in steel* are incorporated in such high class *All-Aluminum* equipment as shown here. Where the economy represented by steel is subordinate to the appearance and wonderful durability of Alcoa aluminum, nothing better than Sanymetal construction is obtainable.

We shall be glad to furnish particulars of cost and length of life on aluminum construction.

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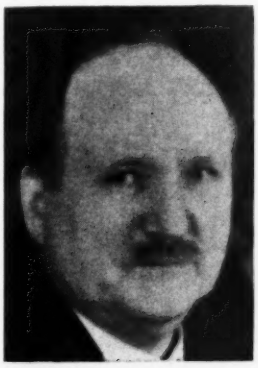
Two pieces of ¾-in. pipe were welded into a header so that when mounted, they were parallel to each other, horizontal and about 10 in. apart. The ends of the pipe welded into the header were the ones tested. One was carefully reamed while the other had the customary burr on the inside. About three or four inches from the tested end of each pipe, a short length of approximately 3/16-in. pipe was welded, pointing down, and forming a tee. Water was run into the header and the discharge was through the ¾-in. pipes. The stream of water from the well reamed ¾-in. pipe was larger in volume and was thrown much farther than the stream from the ¾-in. pipe having a burr on the inside.

These experiments serve to indicate the intense practicability of the course. It is more than likely that every practical plumbing contractor, if he has not already investigated them for himself, has wondered at one time or another just how important some of the practices are which he uses in his work and what would happen if he were able to vary some of them. Ordinarily, however, the press of practical matters makes it impossible for him to experiment, thus the short course fills a long-felt desire and need.

◆

Heating Board of Trade Elects Officers

The Heating Board of Trade of New York at its recent annual meeting, in addition to hearing reports from the various committees and enacting several broadening changes in articles of the constitution, elected the following officers: President, Werner Nygren of Werner Nygren, Inc.; vice presidents, R. A. Wolff of Wolff & Munier, Inc., A. P. Keasbey of Robert A. Keasbey Co., and S. C. Carrier of Heggie-Simplex Boiler Co.; treasurer, P. R. Mork of Crane Co.



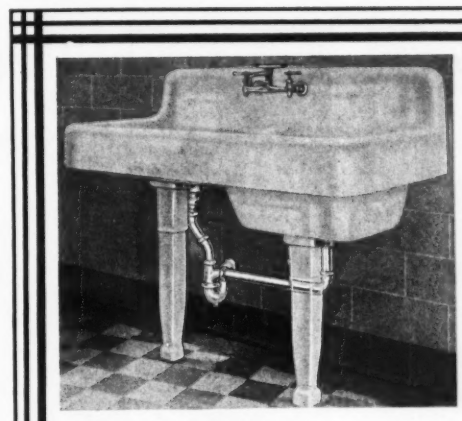
Werner Nygren

Board of Governors: Engineers—L. T. M. Ralston of L. T. M. Ralston, Inc., A. L. Jaros, Jr., of Jaros & Baum, J. G. Eadie of Eadie, Freund & Campbell; contractors—L. K. Berman of Raisler Heating Co., W. W. Hubbard of Hubbard & Lange, Inc., J. L. Murphy of J. L. Murphy, Inc.; subcontractors—K. Duff of Johnson Service Co., George Allen, Jr., of Geo. Allen & Son, B. W. Bennett of Charles Hartmann Co.

Manufacturers—G. E. Olsen of Fitzgibbons Boiler Co., H. B. Hedges of Carrier-York Corp., E. J. Ritchie of Sarco Co., William LeCompte of Jenkins Bros., J. J. Ney of American Radiator Co.; jobbers—B. F. Gilmour of B. F. Gilmour Co., Inc., M. M. Goldsmith of Sam S. Glauber, Inc., E. F. Keating of E. F. Keating Co.; utilities—F. T. Head of Consolidated Gas Co.

◆

Newark, N. J.—The New Jersey Heating Corp. has been chartered, with a capital of $5,000, to establish and operate a heating engineering and contracting business.



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IMPOSSIBLE for foul or stagnant air to pass from the sink inlet to the tray inlet or vice versa, because of the sanitary wall projecting BELOW water line.

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It will never steam bind, properly installed, and its powerful suction will be just as effective handling hot water as on an ordinary pumping job.

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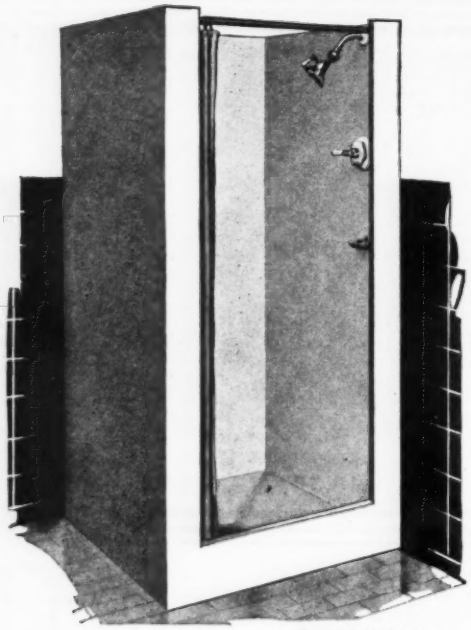

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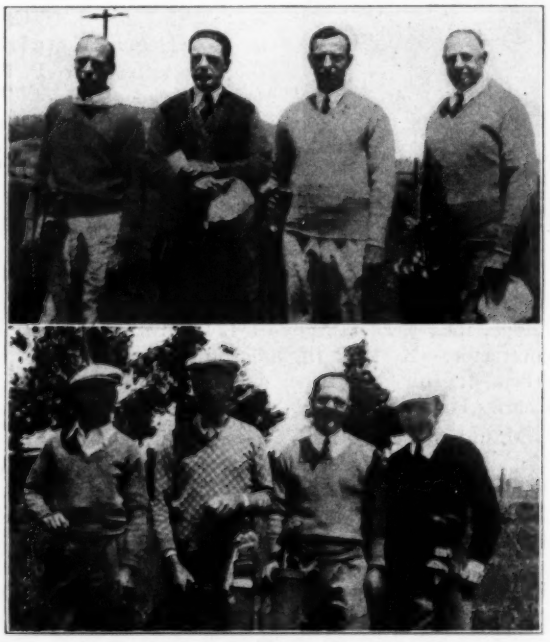
P. and H. Club Plays Ingleside Course

Clear skies, no wind, plenty of good-fellowship and a generous turnout were features that combined to make a success of the January tournament of the Plumbing and Heating Club of San Francisco, when master plumbers, manufacturers and jobbers representing the golfing division of the organization turned out at the Ingleside course.

Class A honors went to W. Seitz who shot an 88-18-70, while W. H. Rainwater played a pretty game and turned in an 88-24-64 card. Both C and D divisions were dead heats. In C class, the firm of Higgins & Kraus set up a tie when Charles Higgins and Edward Kraus each shot a 92-27-65 score. D class honors were likewise split by H. H. Hoopes and Clarence Drucker when they handed in 105-33-72 cards. Robert Allmon, chairman of the golf committee, was in charge of the tournament.

The scores for the day follow:

	G.	H.	N.		G.	H.	N.
Young	88	9	79	Higgins	92	27	65
Wilson	92	15	77	Hoopes	105	33	72
O'Hair	87	14	73	Rea (Guest)	109	..	109
Clark	98	21	77	Doerr	101	24	77
Turner, W.	89	18	71	Paulson (Guest).	89	..	89
Ceasar	107	26	81	Staufaucher (G.).	117	..	117
Olsen	111	31	80	Drucker	105	33	72
Finch	93	23	70	Seitz	88	18	70
Pomerene	96	24	72	Anderson	97	16	81
Elliott	82	11	71	Forsythe	96	26	70
Blair	92	18	74	Hoyt	89	16	73
Turner, D.	99	26	73	Burke (Guest)	105	..	105
Brown (Guest).	105	..	105	Leary	99	21	78
Camp	101	20	81	Heymans	108	26	82
Pearce	89	24	65	McCarthy	110	20	90
McLeod	95	20	75	Clements	107	30	77
Gabbert	99	22	77	Brace (Guest)	111	..	111
Rainwater	88	24	64	Shepard (Guest).	98	..	98
Kerr (Guest)	89	..	89	Bogue	110	30	80
Kraus	92	27	65	Beuttler (Guest).	98	..	98
Lawson	96	22	74				



Top row: A. C. Maryon, Walter Seitz, C. F. Ceasar and Martin Doerr. Bottom row: A. G. Atwood, Jack Camp, Al. Somerton and Harry Morse. Photos taken at the Ingleside golf meet of the Plumbing and Heating Club of San Francisco

New Officers Now Lead Many Associations

Hackensack and Vicinity, N. J.

The Master Plumbers', Steam and Sheet Metal Workers' Association of Hackensack and Vicinity, N. J., has elected the following officers for the 1930-31 term: A. R. Kampff, president, Maywood; H. Sachs, vice president, Hackensack; Harrison Tallman, secretary-treasurer, Ridgefield Park.

Evansville, Ind.

The Master Plumbers' Association of Evansville, Indiana, met recently and elected the following officers for the 1930-31 term: Walter Newman, president; Carl Blumm, vice president; Clarence Wolf, secretary; and Charles R. Saberton, treasurer.

Harrisburg, Pa.

The Harrisburg Association of Master Plumbers, Harrisburg, Pennsylvania, has elected Charles Grier as president for the coming year. The other officers of the association are Harry Wilhelm, vice president; and John H. Miller, secretary and treasurer.

Portsmouth, Va.

The Portsmouth Master Plumbers' Association, Portsmouth, Virginia, has elected the following officers to serve during the forthcoming year: E. L. Norris, president; L. W. Watson, vice president; and W. L. Bennett as secretary and treasurer.

Fitchburg, Mass.

The Fitchburg Master Plumbers' Association, Fitchburg, Massachusetts, has elected D. J. Whooley as president for the ensuing year, and W. R. Illig as secretary-treasurer. No vice president has been announced.

Bronx

The Bronx Master Plumbers' Association, of Bronx, New York City, has elected as its president Frank Habeck to serve during the 1930-31 term. S. George Arnone was elected vice president; Philip Farbman, secretary; and Alfred Beyrodt, treasurer.

New Britain, Conn.

The New Britain Master Plumbers' Association, New Britain, Connecticut, recently elected the following officers for the 1930-31 term: William R. Fenn, president; Fred W. Loomis, vice president; Arthur J. Kallberg, secretary; and Carl A. Hjerpe, treasurer.

Rensselaer, N. Y.

The Master Plumbers Association of Rensselaer, met recently and elected the following officers to serve during the ensuing year: George Mollenkopf, president; Floyd Shufelt, vice president; Charles Leffler, secretary-treasurer, and Joseph A. Adelska, recording secretary.

Arlington County, Va.

The Master Plumbers' Association of Arlington County, Va., elected the following officers for the ensuing year at a recent meeting: Stephen E. Childs, president; William E. Wolff, vice president; Charles Granniger, secretary; E. Birch, treasurer; and Peter Starke, sergeant-at-arms.

Wisconsin Valley

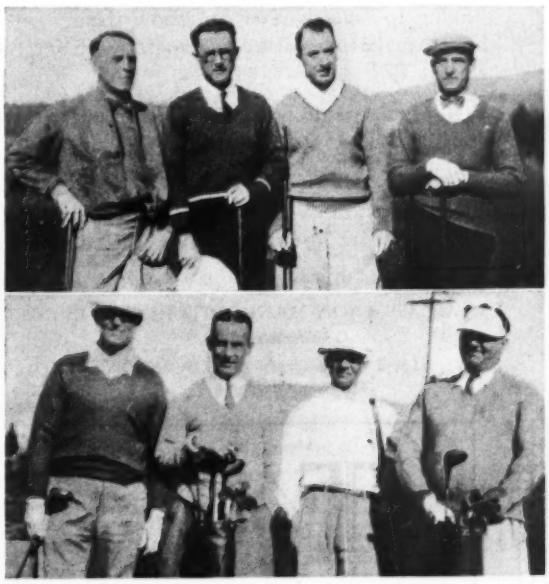
The Wisconsin Valley Sanitary Club, with headquarters at Marshfield, Wisconsin, met recently and elected the following officers to serve during the 1930-31 term. Lewis J. Eron, president, of Wisconsin Rapids; B. J. Hett, Wausau, vice president; and Joseph J. Stadler, of Marshfield, secretary-treasurer.

Houston, Tex.

The Sanitary and Heating Engineers of Houston, Texas, Inc., have re-elected all their former officers to serve during 1930-31. W. Henry Warren is president; D. D. Robb, vice president; and W. E. Jameson, secretary.

Atlantic City and County, N. J.

The Master Plumbers' Association of Atlantic City and Atlantic County, N. J., with headquarters at 32 South Pennsylvania avenue, Atlantic City, has elected



Top picture, left to right: H. W. Finch, H. Porter Wilson, H. W. Pomerene and J. V. Young. Bottom picture: S. W. Kerr, William Hoyt, William Birk and J. W. Forsythe. Photos taken at the golf tournament of the Plumbing and Heating Club of San Francisco, held recently at the Ingleside course

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HISTORY will know 1931 as a remodeling year! People are in a "fixing-up" mood. You can show them how to make their bathrooms modern with a quiet T/N.

T/N has no wall tank. Bowl and tank are in *one piece*. Quiet flushing. T/N fits easily under windows, stairs or in a corner.

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Dept. 613, 220 Delaware Ave., Buffalo, N. Y.

T/N
ONE PIECE
WATER CLOSET

the following officers to serve during the coming year: William J. Crane, president; H. H. Sparks, vice president; Roland Allen, secretary; and Norris L. Gaskill, treasurer.

Haverhill, Mass.

The Haverhill Master Plumbers' Association has elected the following officers to serve during 1930-31: Robert Walmsley, president; Henry Lebaw, vice president; William G. N. Tyrie, secretary; and Albert E. Dugdale, treasurer.

Los Angeles, Calif.

The Los Angeles Merchant Plumbers Association recently elected new officers to serve during the coming year. Herbert R. Fielden is president; E. J. Carroll, first vice president; M. L. Pellicciotti, second vice president; Louis Mellinkoff, secretary, and F. D. Reed is treasurer.

Miami, Fla.

The Master Plumbers Association of Greater Miami, Florida, recently re-elected Harry J. Sanborn president for the ensuing year. A. L. Hildebrant is vice president; G. H. Wilbraham, secretary, and Freeman P. Moss was re-elected treasurer.

Decatur, Ill.

The Plumbing and Heating Bureau of Decatur, Illinois, has elected O. L. Royer to serve as president during the ensuing year. M. S. Clesson is to serve as vice president; C. E. Thorkelson as secretary, and O. W. Dawson, treasurer.

Utah County, Utah

The Utah County Association of Sanitary and Heating Engineers has elected Alex Mortenson of Provo as president; Sam Grant, of American Fork, vice president; Earl Blumenthal, of Provo, secretary, and E. O. Moe, also of Provo, treasurer.

Morristown and Vicinity, N. J.

The Master Plumbers' & Tinners' Association of Morristown and Vicinity, with headquarters in Morristown, N. J., has elected the following officers to serve during the 1930-31 term: John J. Kane of Morristown, president; Halsey B. Armstrong of Morris Plains, vice president; Robert A. Sagarese, Morristown, secretary; and William A. Snudden, also of Morristown, treasurer.

San Diego, Calif.

The San Diego Merchant Plumbers' Association recently elected Fred A. Heilbron to serve as president during the coming year. Other officers elected were Edw. Rohde, vice president; A. C. Goeddel, secretary, and C. W. Powers, treasurer.

Cape Ann, Mass.

The Cape Ann Master Plumbers' Association of Gloucester, Mass., has elected Elliott W. Tarr to serve as president during the coming year. Edward M. Law was elected vice president; G. E. Cameron, secretary, and Levi W. Thurston, treasurer.

MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

REPORTS from the principal jobbing centers indicate that the movement of plumbing and heating materials during the past fortnight, while maintaining a fairly even pace from one day to the next, failed to show much in the way of totals for the period. Requirements of plumbing and heating contractors are not sufficiently heavy to give wholesalers any kind of a stock-turn, and, under these conditions, jobbers are ordering from their sources of supply chiefly in small lots to replace material moved into consumption. Reports indicate that as a general rule future commitments are scarce. While curtailed production schedules prevail at many manufacturing points, stocks on hand are broad enough to enable jobbers to secure quick delivery on staple items. Taking the market as a whole, prices held firm during the period and were practically unchanged from the preceding two-week period. Reports from the New York territory indicated a slight strenghthening in prices on certain tubular brass items and brass pipe. And, while no change was made in sheet prices, it is said that prices on boilers and radiation stiffened in the Chicago territory the first of this month.

In commenting on the business situation the Business Bulletin of the Cleveland Trust Co. points out that "For the first time since last summer some of the composite indexes of business activity are telling us that industry and trade are beginning to hold their own, or even to advance a little. This is a new and important development, for until recently these statistical indicators have consistently and unanimously been moving downward from month to month. They do not now indicate that business recovery is getting under way, but they do give grounds for hope that the bottom of the depression is being reached. When business is seriously depressed recovery is likely to start either very early in the spring, or at the end of the summer."

January wholesale prices of six standard plumbing fixtures for a six-room house, as ascertained by the bureau of the census from reports of twelve representative manufacturers and wholesalers, averaged $99.26 as compared with $98.52 in December, 1930, $100.55 in January 1930, and $100.30 in January 1929. . . . January shipments of domestic water softening apparatus, as reported to the bureau by 21 manufacturers, totaled 753 units with a net sale price of $94,557, as compared with 645 units in December 1930, having a net sale price of $86,530, and 1,240 units in January 1930, with a net sale price of $147,149. . . . December 1930 shipments of domestic pumps and water systems, based on reports submitted to the bureau by 39 manufacturers, totaled 1,258 units with a net sale price of $94,081, as compared with 965 units in the corresponding month of 1929, and a net sale price of $74,173.

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NAME..... CITY AND STATE.....

NEW YORK

Business Tone Is Dull

BUSINESS indications from many sources, some simply by expression and others substantiated by recitals of facts and figures, point toward betterment. Other interests observe nothing beyond prospects for better activity several months hence, while still others, however less in number but just as emphatic in their opinions, cannot see betterment for many months. In the first segregation there are wholesalers, contractors and manufacturers who offer their dollar and cents figures to prove that interest is keener; generally there are out of the ordinary circumstances favoring these extreme optimists. Among those commentators whose expressions are of the pessimistic order, some point to the many office buildings recently completed with but a small percentage of the rentable space occupied and to the many homes built last year to sell at a certain figure for which 25 per cent less is now being asked with few inquirers. These conditions, it is contended, overbalance efforts to interest home seekers in building on the basis that materials' costs are at a low point and labor is abundant.

Notwithstanding these remarks, a recent report made public by F. W. Dodge Corp., having to do with construction contracts awarded, states that the first two weeks of February showed an increase of $8,621,700 over the same period of 1930 for the metropolitan New York area. The total of these awards for new undertakings, the report continues, was $30,732,200, more than half of which is created by residential building. Apartment house construction, leading, totals $12,294,500, the index continues, and hotel construction, amounting to $4,000,000 over the first weeks of the month last year, makes a poor showing this year, as only comparatively small alteration and repair job expenditures are included.

With producing sources generally prepared to make quick shipments to wholesalers, the latter have done little in the way of buying since their pre-inventory stocks were strengthened during January. Long pipe and cast iron pipe manufacturers report demand as light. Fixture interests contend they see not the slightest upturn even in inquiries. Boiler and radiator sales are fairly good. Range boilers are moving in a desultory fashion. Tubular and cast brass along with brass fittings' producers report commitments on the part of jobbers more substantial. They accredit this to the strength the copper market developed in the last week of February. Some tubular brass goods manufacturers withdrew prices; others indicated a slight advance on a few items. Brass pipe prices also advanced. Tin reached a new high for the year when it climbed from 25 cents per pound at about the middle of February to 27 cents per pound at the end of the month. Several close observers remarked on the steadiness of prices generally in face of the lack of business. No improvement is seen in the credit situation over the spotty conditions which have obtained for some time.

CENTRAL WEST

Chicago Construction Gains

CHICAGO made a forward stride in building in the month of February by registering heavy gains over the previous month and the same month a year ago. A total of 126 permits issued aggregated $7,877,000. The February volume represents a 177.5 per cent gain over the January total of $2,838,400 and a 46.5 per cent gain over the February, 1930, total of $5,442,500, according to comparisons made by the building survey department of S. W. Straus & Co. "The building reports embody about the first optimistic signs that Chicago construction is pulling toward the road to normalcy," according to E. M. Craig, executive secretary of the Building Construction Employers' Association. "Basic forecasts, however, should not be made, as the industrial condition of the nation is undergoing a severe readjustment period and contributory conditions may alter, at least temporarily, our present optimistic opinion."

Business in plumbing and heating, at least as far as sales were concerned, showed little change in this territory in comparison with the preceding fortnightly period. Jobbers' rate of stock turn is infrequent and, consequently, they are following a conservative policy when placing orders with their sources of supply. Manufacturers' salesmen say that most orders reaching them are for small quantities to replace low spots in their distributors' stocks and that the bulk of the business now coming in calls for immediate shipment. Regardless of low stocks at wholesaling points, contractors are able as a rule to secure staple material about as wanted. Manufacturers, too, are in a position to take care of business without delay.

While no change was made in manufacturers' sheet prices, it is said that effective March 2 a number of boiler and radiator manufacturers in this territory changed their selling arrangements in such a way as to strengthen the actual going prices. In the case of the other major commodities in plumbing and heating, however, prices held at the same level as during the preceding fortnight. In most cases the market is reported firm at published price levels.

Toward the end of last month President Hoover said that 450,000 persons would be working on government construction projects within the next thirty days. The figure was compared by the President with 150,000 persons who were employed on construction work prior to the depression.

In addition to the work now

under contract, President Hoover said that in most of the current appropriation bills before congress there is a clause making any construction appropriation immediately available.

"This will make available," he said, "approximately 500 millions more in case it is needed. Some of it, of course, will not be used, but it will be there for use if necessary."

MIDDLE ATLANTIC

Moderate Pace Continues

BUSINESS in the Middle Atlantic section is reported as being of a moderate nature. Master plumbers are only fairly well engaged, as has been the case for several weeks in this territory. In January wholesalers were prone to place commitments for their stocks, after finding practically all items at a low ebb when taking inventories at the year's end. This business gave a fairly good tone to the movement of goods from producers to wholesalers during that month, but the past thirty-day period counteracted, and returned to a rather slow pace.

Wholesalers state that by far the larger part of their turnover is confined to goods for repair work, which has held to a rather steady volume over a period of three months or more. A spirit of optimism seems to prevail among the trade generally, and the majority of those interviewed expressed the opinion that the coming spring and fall months will surely see a quickening in business activity in this industry.

Jobbers in the Scranton and Wilkes-Barre section say that, while no great change in contractor activity has taken place in that section, prospects for early future business are promising. Other observers in the larger jobbing centers are of the opinion that a moderate turnover of materials will prevail until the spring construction work gets under way. Price inquiries are received by dealers rather frequently, and a considerable amount of estimating is being enacted, but the bulk of these estimates are for contemplated future work.

The placing of small lot buying prevails among wholesalers, as purchases reflect the immediate needs of the trade. Deliveries from manufacturing sources are usually of a very prompt nature, while prices remained firm throughout the period. No price changes of any great consequence were announced during the period by manufacturers of plumbing and heating materials.

For reasons previously stated, the volume of finishing materials such as pottery, enameled ware and brass goods sold last month and during the fortnight was light in this section. The consumption of steel pipe and brass pipe was characterized as slow by representatives of manufacturers of those items. Wrought iron pipe salesmen reporting, note that the last two weeks of February produced a slight increase in the number of orders received, and releases were granted on large commitments for specific projects received at an earlier date.

Boilers and radiators are experiencing a retarded demand and sales volumes are not up to those of January and do not reach the same figures as those of the same two months of last year, it is reported.

Figures released by the F. W. Dodge Corp., showing the 12-month valuations in construction contracts awarded for 37 eastern states from 1925 to 1930, inclusive, give an interesting story and plainly show why volumes dropped insofar as plumbing and heating materials are concerned:

1925	$6,006,426,000
1926	6,380,915,000
1927	6,303,055,000
1928	6,628,286,000
1929	5,750,791,000
1930	4,523,115,000

Building contracts awarded for the fifth week in the Middle Atlantic section, according to the F. W. Dodge Corp., show a great appreciation in comparison to the fourth period of 1931. Total valuation of contracts awarded for the fifth week was $17,587,400, as compared with $5,315,300 for the fourth period. Residential construction commanded a total of $8,507,400, while commercial projects totaled $7,441,500 during the fifth week. The large volume of residential building for the week may be taken as a good harbinger of a pick-up in this type of work during the coming months, as the prospective individual home owners realize that the cost of materials at present warrant building. However, the total for the sixth week dropped decidedly in comparison to the previous week, showing only $6,659,100, although it was an improvement over the fourth period.

NEW ENGLAND

Active Building Program Indicated

NO PARTICULAR improvement of conditions surrounding the plumbing and heating business obtained in this territory during the two weeks intervening since our last report. While there are scattered instances of master plumbers and heating contractors employing sizeable working crews, such activities are due to commencements of those major operations, contracts for which were awarded some time ago, and the aggregate of which does not lend any decided stimulus to the situation as a whole. The majority of contractors have comparatively little work on hand, for residential and other construction of minor proportions has not yet begun to assume definite shape. This seasonal quiescence of demand naturally reflects itself on wholesalers and manufacturers, the former being seemingly more

affected than the latter. Most jobbers, not having had a particularly profitable year in 1930, and unable to foresee any immediate improvement in their sales, have been reducing their expenses as much as possible. Abbreviations of their organizations and curtailment of their payrolls have been and still are being effected. The same methods have been adopted by manufacturers, though to lesser degree, and many have also cut off one, two or three days per week in the operating schedules at their plants.

According to leading statisticians, the development of the yearly construction program has reached as good, if not a better, stride than during the early part of last year. During the past week Secretary Mellon forwarded to congress a list of allotments for various territories which are to be appropriated from the 504 million dollar public building fund. The New England area is well represented in this list and allocations to be appropriated for are: Massachusetts, $6,975,000; Vermont, $686,000; Rhode Island, $1,255,000; Maine, $899,000; New Hampshire, $555,000; Connecticut, $1,515,000. Nelson, Hunt & Co. of Chicago, in an analysis of available building data, report a good degree of activity in New England, there being approximately 250 million dollars worth of work under way or about to start.

They state, however, that it is too early to estimate whether building this year will equal or exceed that of 1930, although the indications to date are encouraging. F. W. Dodge Corp. reports that contracts for building and engineering operations awarded in this territory for the week ending February 17, 1931, totaled $5,077,100, as compared with $3,820,500 for the corresponding week of 1930 and $3,975,100 for the average of previous weeks in this year. It is also interesting to note in the following analysis which this organization has made, the relatively strong position of residential construction which promises better activity in this field within the following months. This table is a compilation in the various classes of the contract awards made from February 2 to 14.

Classification	Projects No.	Valuation
Commercial building	57	$912,900
Industrial building	6	232,000
Educational building	4	820,000
Hospitals, institutions	2	147,500
Public building	4	105,100
Religious, etc.	2	55,000
Social, etc.	14	164,800
Non-residential	89	2,437,300
Residential building	218	3,769,100
Total building	307	$6,206,400
Public works, public utilities	22	1,561,500
Total construction	329	$7,767,900

Buyers for wholesale houses are interviewing manufacturers' salesmen but are not placing orders which amount to much. Of course, there is the constant need for replacements of jobbers' stocks and such commitments together with sporadic carload placements constitute makers' receipts. The turnover of roughing-in goods is not animated and movements from distributing points of those items for finishing purposes indicate only light demand on the part of plumbing contractors. Shipments of heating materials are also reported to be quiet. Manufacturers maintain their position to ship on short notice. There has been no important price changes.

THE STOCK MARKET

Range for Week Ending February 28, 1931†

Par Value	1931 High	1931 Low		*	Weekly High	Weekly Low	Close
NP	109⅜	92½	Air Reduction Sales Co	A	109⅜	101⅝	102¼
NP	20½	15½	American Rad. & Stand. San. Corp	A	20½	18¾	20½
25	37⅜	26⅝	American Rolling Mills Co	A	36⅞	32⅞	33¼
50	43¼	29¾	Anaconda Copper Mining Co	A	43¼	40	42
NP	24	20	Bastian-Blessing Co	C	22	22	22
NP	70⅜	45⅝	Bethlehem Steel Co., com	A	70⅜	66	67⅜
100	123	114½	Bethlehem Steel Co., pfd	A	122	121⅜	122
NP	15	10½	Brunswick-Balke-Collender Co	A	14½	12	12
NP	69¾	37⅝	A. M. Byers Co., com	A & E	69½	62	63½
100	106⅞	99⅞	A. M. Byers Co., pfd	A & E	106⅞	106	106
25	40	37	Crane Co., com	C	38¼	37	37
100	119	115	Crane Co., pfd	C	119	119	119
20	5½	5¼	Eagle-Picher Lead Co	H	5½	5¼	5¼
NP	7	5½	Fairbanks Co., pfd	A	5	4½	4½
NP	28	22	Fairbanks, Morse & Co., com	A	28½	25	28
100	109⅞	103	Fairbanks, Morse & Co., pfd	A	103	103	103
NP	20	6	Greenfield Tap & Die Corp	B	6	6	6
NP	22¾	15½	Iron Fireman Mfg. Co	C	22	19¼	19½
NP	77⅞	52½	Johns-Manville Corp., com	A	77⅞	70¾	72¾
100	125	118	Johns-Manville Corp., pfd	A	125	124	124
100	121⅝	119½	Jones & Laughlin, pfd	A & E	121⅝	121	121⅝
NP	58½	38½	Minneapolis-Honeywell Reg. Co., com	A	58	58	58
NP	73	32¾	Moline Mfg. Co	B & C	36½	36½	36½
NP	19⅞	14⅞	Motor Wheel Corp	A	19⅝	18⅞	18⅝
NP	41	40	F. E. Myers & Bro. Co., com	G	41¼	40	40
100	105	105	F. E. Myers & Bro. Co., pfd	G	105	105	105
100	132	118½	National Lead Co., com	A	130½	127¼	127¼
100	140¼	136	National Lead Co., pfd. "A"	A	140	140	140
100	120	116⅝	National Lead Co., pfd. "B"	A	119⅞	119½	119⅞
NP	1⅛	⅝	National Radiator Corp., com	A	⅞	⅝	⅝
NP	2½	2⅛	National Radiator Corp., pfd	A	2⅛	2⅛	2⅛
5	31⅝	11	Herman Nelson Corp	B	11½	11	11
NP	68½	68	Ohio Brass Co., "B"	B & G	68½	68½	68½
NP	30	27	Revere Copper & Brass, Inc	A	29½	29⅝	29⅝
NP	83½	81	Revere Copper & Brass, Inc. "A"	A	81	81	81
NP	33	21	Rund Mfg. Co	C	24	23¼	24
NP	27½	25	Spang, Chalfant & Co., com	A	27¼	27	27
100	92½	91½	Spang, Chalfant & Co., pfd	A	92	92	92
NP	26¼	16⅝	Time-O-Stat Controls Co., "A"	C	25½	25¼	25¼
NP	72	55½	Union Carbide & Carbon Corp	A	72	67½	68
20	36	27⅝	U. S. Cast Iron P. & F. Co., com	A	36	33	34½
NP	21	15⅝	U. S. Cast Iron P. & F. Co., 1st pfd	A	19½	19½	19½
NP	21¼	18½	U. S. Cast Iron P. & F. Co., 2nd pfd	A	21⅛	21⅛	21⅛
NP	55	20	U. S. Radiator Corp., com	B & D	20	20	20
100	100	100	U. S. Radiator Corp., pfd	D	100	100	100
NP	17⅛	11⅝	U. S. Rubber Co., com	A	17⅛	15½	16⅛
100	33½	20⅜	U. S. Rubber Co., pfd	A	33½	28	29
100	152⅝	137⅞	U. S. Steel Corp., com	A	152⅝	148½	148½
100	148½	143⅜	U. S. Steel Corp., pfd	A	147	146⅝	146¾
NP	4	2⅝	Universal Pipe & Radiator Co	A	3⅝	3¼	3⅜
NP	15	12	Walworth Co	A	14½	12⅝	13
NP	19½	5½	Wayne Co., com	B & C	6½	6½	6½
NP	22½	21	Wayne Co., pfd	B & C	21½	21	21½
100	110	93	Wheeling Steel Corp., com	B	110	108	110
100	109	109	Wheeling Steel Corp., pfd. "A"	B	109	109	109
NP	23¾	16	Williams Oil-O-Matic Htg. Corp	C	16	16	16
NP	78	73	Youngstown Sheet & Tube Co	A	78	75	78

*Where listed—
A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Pittsburgh Stock Exchange
F—St. Louis Stock Exchange
G—Cleveland Stock Exchange
H—Cincinnati Stock Exchange

†If there is no trading during the current week, range represents last week recorded.

SOUTHEAST

Business Continues Moderate

ONLY a moderate volume was realized in this territory for the past fortnight and master plumbers and distributors generally are continuing the policy of close range buying, and seem satisfied, for the time being at least, with maintaining just enough material to meet the immediate demands of the trade. Opinions differ as to when a definite upward turn may be expected in plumbing and heating, and although there are some indications of improvement all along the line, the trade apparently is waiting for constructive factors to get definitely under way before any large commitments are made.

One favorable sign is an increase in the number of residences of both the smaller and larger type. Many observers are of the opinion that residential construction is usually the forerunner of business improvement. Another constructive development in the industry is the fact that architects and engineers are more active with prospective work that is expected to materialize within the next few months. And, too, a composite of views indicates that the recession in general business has been completed.

No particular fluctuations in the leading lines were reported during the past two-week period, and sales were said to be holding at about the same level as noted in our last review. Boilers and radiators, and the general heating lines, held up fairly well, but pottery was in small demand. A moderate turnover of wrought iron pipe, soil pipe and fittings was reported. Sales of range boilers continued light. Sales in plumbers' brass goods were fair, it was said, and enameled ware movement into consumption was moderate.

Credit conditions are reported to be seasonally good, yet collections are coming in slowly, but of sufficient frequence to keep accounts in a rather active state. Jobbers are watching their accounts closely, and hence a rather healthy condition has been obtained.

PACIFIC COAST

Public Shows Interest in Plumbing

BUSINESS generally on the Coast continues at a moderate level, with more activity in some sections than in others.

The remark has been made that the only thing the Pacific Coast territory needs at this time, at least as far as the construction industry is concerned, is someone to start a building program. Money is reported plentiful and building costs are at a low level, but for some reason those contemplating the construction of homes are hesitant about going ahead with their plans. Newspapers in this territory are continually stressing the point that the present is a most advantageous time for the home owner to build or renovate his holdings, and it is the opinion of many in the construction industry that this publicity will eventually have a beneficial effect upon the building trade.

A large wholesaler of plumbing and heating supplies, with branches in most of the principal cities in this territory, says that the large number of visitors to his various showrooms indicates that the public is more interested in plumbing fixtures than for some time past. Architects interviewed say that they are getting more projects put up to them than for some time, and that although most of these are for estimate purposes only, still they are a good sign.

The demand for finish plumbing material such as enameled ware, pottery, etc., continues at a moderate level which distributors have no difficulty in filling from stocks on hand. Distributors' prices to the trade on these commodities vary somewhat in the different jobbing centers and prices are more firm in some sections than in others.

Steel pipe shows little change in demand, but it is reported that the market on this item is weak in many distributing centers. Cast and malleable fittings are not in very heavy demand at present and recent price reductions have not stimulated sales to any extent.

Soil pipe and fittings are moving slowly and distributors' prices are unchanged in this territory.

The Metal Market

	March 3	Average Jan., 1931	Average Nov., 1930	Average 1929
PIG IRON—				
No. 2 foundry, Chicago	$17.50	$17.50	$17.50	$20.00
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.65c	1.65c	1.60c	1.93c
Blue annealed sheets, No. 13, Pittsburgh, per lb.	2.05c	2.05c	2.05c	2.17c
Black sheets, No. 24, Pittsburgh, per lb.	2.35c	2.35c	2.35c	2.85c
Galvanized sheets, No. 24, Pittsburgh, per lb.	2.90c	2.90c	2.95c	3.57c
TIN—				
Straits tin (spot) New York	27.25c			
LEAD—				
E. St. Louis	4.35c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	12½c	Copper, light	6½c
Block tin pipe	19 c	Heavy copper and wire	7¼c
Brass, light	4¼c	Zinc	1¾c
Brass, heavy yellow	4½c	Lead, heavy	3 c
No. 1 comp. red brass	6½c	Solder joints (close cut)	5¼c
Heavy crucible copper	7¼c		

NOTE: Prices are those quoted on Tuesday of this week.

SAN-EQUIP FILTER PIPE

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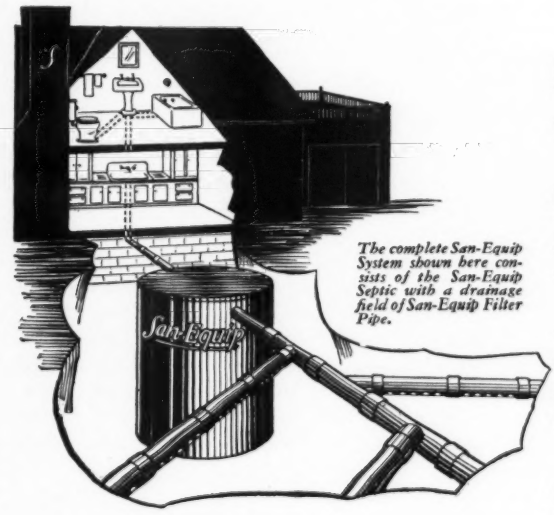

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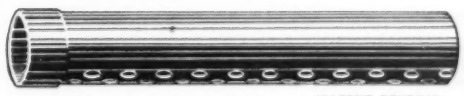
SAN-EQUIP Filter Pipe, used in place of ordinary tile, will improve your septic tank drainage fields.

When ordinary tile is used, drainage takes place only at the open joints. Dirt seeps into these joints and clogs the line. Frost and settling of the ground pull apart the tile and stop drainage.

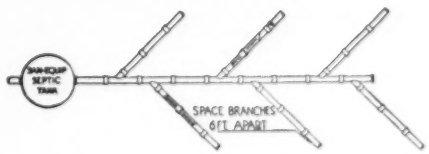
San-Equip Filter Pipe is perforated to give 12 to 20 times more drainage area per foot. Tight joints keep the pipe in line and keep out dirt. It will not break—is easier to handle and lay.

When you install San-Equip Filter Pipe, you make money on the pipe as well as on the tank. Less pipe is needed, which means a saving of 30% to 50% in labor. No waste from breakage. You can do a better job and make a bigger profit by using San-Equip Filter Pipe on every septic job.

San-Equip Filter Pipe is an improved, unbreakable drain pipe for septic drainage field use. It is made of 16 gauge copper-bearing iron, rust-proofed inside and out with mineral asphalt—*the same materials as used in the standard San-Equip Septic Tank.* San-Equip Filter Pipe lays easier, functions longer and works better than ordinary tile. Packed in cartons for convenient handling.



(PATENT PENDING)



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Costs — Markets — Prices: A Challenge to Industry*

BUSINESS in general, and many basic industries in particular, are adjusting themselves to present economic conditions with difficulty. Over-expansion of production facilities, and changing habits in consumers' demands have produced new problems; and the old problems of prices and profits have assumed new aspects of importance. In respect to every phase of endeavor, there is abundant evidence of the desire of business men to know where they are and wither they are tending. Is it peculiar, then, since business is uncertain as to its present status and its future outlook, that management is examining with interest various plans, methods of procedure and schemes for improving the health of industry and commerce?

The Possibilities of Cost Accounting

The particular subject for discussion here is to appraise one tool of management with respect to its potentialities as an aid in determining where business is at any particular moment, and in what direction business is tending. This tool is cost accounting. Cost accounting is no new thing, no cure-all for the ills of business. It is as old as business itself, and yet it is finding new applications, and its methods are being adapted to the ever changing demands of industry. In spite of this, however, the present situation indicates that many business leaders have failed to appreciate what *adequate* cost finding methods can reveal regarding the operation of economic forces within their own businesses.

The business man who carries the details of his business under his hat and on scraps of paper in his pocket has no place in the present economic order. When products were few in number, and margins of profits were ample, there was little demand for analytical study of detail. The small business could be conducted without giving much attention to record-keeping, and a single proprietor could formulate all his policies of business conduct in terms of his own experience, and by relying upon his own accumulation of data.

The adherence to such practices is entirely inadequate for present-day business requirements. Business is conducted on a larger scale; consumers' demands become complex, requiring the production of great varieties of products in varying degrees of quality, and in numerous styles, colors, shapes, and sizes; competition for markets becomes a veritable struggle for existence; and profits are reduced in many instances to zero, or to negative quantities. These factors assume proportions which demand decisive action. Management is confronted with the problems of reducing costs of production; of cutting expenses; of eliminating wasteful practices; of controlling inventories; and of budgeting all factors of production. Dependence upon mere opinion and past experience lead but to further confusion. Now, as never before management demands knowledge — and accurate knowledge, because it is only through such knowledge that industry and commerce can ascertain where they are, and also receive a glimpse of whither they are tending. It is in supplying this need that adequate cost accounting affords an effective tool for the functioning of management, since accurate knowledge leads to establishment of sound policies. When based upon unquestioned and unverified assumptions, or upon premises which have not been scrutinized closely, general policies, or decisions affecting current problems lead but to failure.

The Complexities of Cost Elements

To the manufacturer and producer, prices and costs are important elements concerning which present and future knowledge are essential. Material prices have reached such levels that many basic commodities have touched the lowest quotations of a generation, their future course is subject to conjecture. Wage rates, hours of labor and conditions of employment affect the present conduct of industry, influence product costs and demand attention in making plans for the morrow. Other costs of operating business are similarly uncertain, and each is influenced in greater or less degree by the two uncertain elements of material and labor. In addition, the ever-changing structure of business requires outlays of funds never dreamed of a generation ago. The most far-sighted business leader could never conceive of the increasing burden on business of taxes; nor of the requirements to expand markets through the medium of advertising; nor of the rapid progress of invention that makes necessary the scrapping of partly-used equipment for newer machines before the cost of the first has been fully absorbed through depreciation charges.

The Confusion of Unorganized Industry

On the other hand, the stress of unfavorable business conditions coupled with guesswork about costs is proving embarrassing to some industrial groups. Individual operators decry the practice of competitors taking business at less than cost, but they make comparisons in light of their own costs and not those of the competitor who may have an efficient plant which enables him to do a profitable business at a lower cost, and who may have an adequate cost accounting system which enables him to know what he is doing. Unless an industry has developed and has adopted uniform methods of cost determination, no individual operator is competent to judge the practices of his competitor in light of his own cost records only.

Those trade associations which have not availed themselves of the opportunity to develop uniform cost accounting methods are attempting to solve important problems without having adequate knowledge of costs.

* This bulletin is the first of a series which the Department of Manufacture, Chamber of Commerce of the United States, proposes to issue in the interests of better cost accounting methods for industry.

Questions?

ASKED BY READERS AND ANSWERED BY EXPERTS

How Can I Remedy This Radiator Trouble?

Editor, DOMESTIC ENGINEERING:—There are in the basement of a building here seven indirect radiators supplied at the top by 1¼-in. supply branches and drained by 1-in. return lines. Return lines have balanced check valves near connection to the dry return, 10 ft. from radiator, and quick vent air valves between the radiator and first return elbow. The steam and return lines branch right and left from large main between the 4th and 5th radiators and all are graded 1½-in. in 10 feet. On one end is a direct radiator on the floor above, all other pipes are in the basement. The 4th and 5th radiators are closed off and the valve on the 4th leaks a very little, say equal to an opening 1/16th of an inch in diameter, as soon as the steam comes on after being off all night, this air vent begins to shoot a stream of water 3/16th of an inch in diameter up against the ceiling and keeps it up until about ½ an hour after the system is hot and then reduces to just enough leakage to make a chain of drops. It leaks enough to show on the gauge glass at the boiler. The check valve works perfectly. The water in the boiler is clean. This system gave no trouble until a few months ago, though the conditions have been the same. The other radiators give no trouble. Why is this thus?

California. G. J. F.

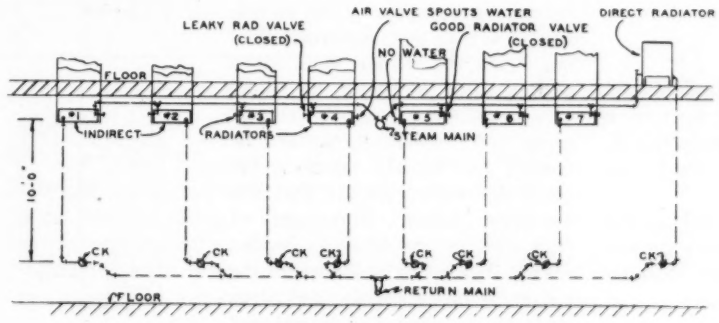

Fig. 1

Although the correspondent does not specifically state the fact it seems apparent that the steam system is a two-pipe gravity steam job with a dry return at least in so far as the radiators in question are concerned. The arrangement from his description is about that shown in Fig. 1.

From the information presented it is desired to point out that correspondent states that no difficulty was experienced with these radiators up to a "few months ago." If this statement is correct it indicates that the trouble is not in the piping arrangement. This leaves three items to be investigated for the cause of the difficulty, viz.: The radiator valve, the air valve and the check valve on the radiator giving trouble.

The correspondent states that the radiator valve on the 4th radiator is defective to the extent that it does not close off tightly. He also states that the check is working perfectly. This narrows down the trouble to the air valve or the radiator inlet valve. Now whether it is assumed that the air valve is functioning correctly or incorrectly the fact remains that, with a tight check and a tight closed radiator valve, no water could be shot out of the air vent even if there were no air valve on the vent and if it were simply an open connection.

This brings us to the conclusion that the whole difficulty must be contained in the leaky radiator valve which allows a small amount of steam to creep under it and to condense in the radiator. Of course an air valve with a float inside is supposed to close off either against steam or water, but if the float is stuck and does not rise, or, if there is no float in the air valve, water will not be held back when present in the radiator and the results described could occur.

This can be explained by remembering that when steam is turned into the system the pressure in the dry return is almost as much as in the steam line, but with steam pressure in the radiators there is a 10 ft. head of water on top of the check which is more than ample to operate the check against the small differential existing between the steam and return mains. When a radiator is closed off, however, the steam pressure does not enter the radiator which results in having only atmospheric pressure on the radiator side of the check and with nearly full steam pressure in the dry return to hold it shut. (See Fig. 2.)

While this condition exists a small quantity of steam leaks in under the radiator valve for radiator No. 4 and condenses therein forming water in the radiator. This amount of steam is not sufficient to materially raise the pressure in the radiator so that the check valve still has to open against the pressure in the return main. The condensation collects in the radiator until it reaches the air valve level and then begins to shoot out through the air valve.

In time the constant flow of steam under the leaky valve warms the radiator and condensation contained therein until the air valve partially closes, but does not

close tight owing to the temperature of the radiator never reaching that of steam due to its badly throttled supply.

The remedy is to replace the radiator inlet valve with a tight valve and the air valve with one which contains a properly operating float. If this is done and the conditions are otherwise as stated by the correspondent there should be no further trouble. The trouble seems to indicate the use of a rather high steam pressure as—with a pressure of two pounds on the return line and a 10

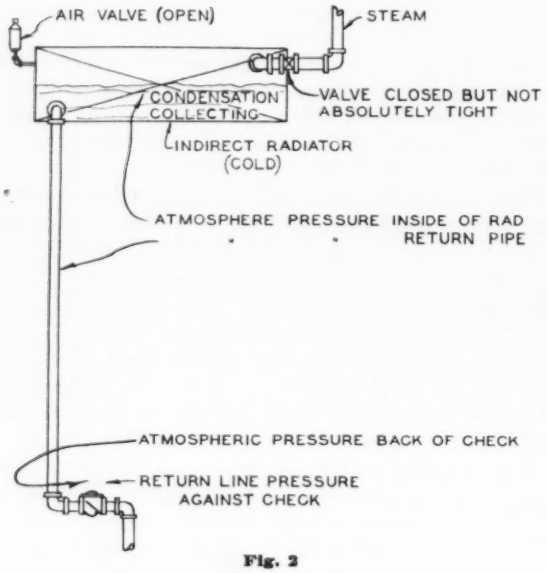

Fig. 2

ft. head of water on top of the check—the check should operate; but if the steam pressure on the return were 5 lb., the 10 ft. head on the check would only be 4.3 lb. or not enough even to balance the pressure much less operate the check.

Should trouble still be experienced after making the changes suggested, it would prove that the correspondent is in error in stating that the check valve was working perfectly and a new check should be tried out.

◆

More About Refrigerator Connections

Editor, DOMESTIC ENGINEERING:—I feel somewhat complimented that you have taken the trouble to comment so fully on my ideas, but I resent the imputation that we "no-vent but stackers" are less desirous for and appreciative of pure air than you back-venters. We believe it is unnecessary to spend a lot of time and money venting traps which, even if they do siphon, fill immediately from the surface drain of the fixture and run-back from the breaking siphon. You make no mention of my principal claim that siphonage does not make the owner send for a plumber, for the reason that it causes him no inconvenience.

I have sent you the names of five experienced plumbers who agree with me. I am adding the name of a Sacramento plumber of 21 years' experience.

Referring to your statement that you might permit a drinking fountain to flush a refrigerator waste stack, may I ask if the traps would then all have to be vented?

California. J. G.

The comment that J. G. refers to will be found on page 148 of the January 10th issue.

The resentfulness that he mentions isn't at all necessary, for anything we may say in our comments on the various questions that come to us for attention, are intended to be entirely free of personalities. We are as far as can be from denying to the other fellow the privilege of taking his plumbing as he may choose. However, the fact that we are requested to give an opinion automatically gives us the right of giving expression to the thought we hold concerning the question involved.

We still cast our vote in favor of the vented plumbing system, but we favor common sense venting. We believe in the simplified venting that is being advocated nowadays, rather than in individually venting every fixture on the plumbing system.

Now as to the subject of siphonage. The action of siphonage may take place from more than one cause. When a fixture trap siphons because of the momentum of its own waste, often there is an amount of waste that will trail into the trap and largely make up for the amount that has been siphoned. This element of safety however, is much more to be counted upon in the case of flat-bottomed fixtures than in such a fixture as the lavatory.

We want to point out however, that when the discharge of some other fixture or fixtures than itself, causes a fixture to siphon, there is then no trailing discharge to make the loss good, and siphonage then leaves the trap wide open. J. G. is correct in saying that siphonage does not make the owner send for a plumber, but the reason we would give is different from the one he gives. We would think that he doesn't call for the plumber, because he never knows that the condition exists. Siphonage of trap seals is one of those hidden results that rarely is known to the tenant or to the owner, and often if it were known, it would not mean much to either.

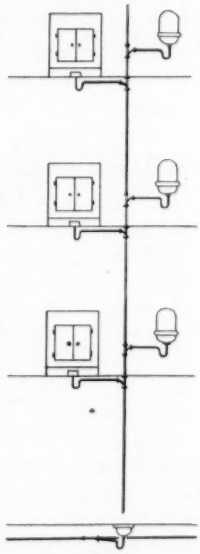

Fig. 1

In his last paragraph, J. G. asks about connecting a drinking fountain into a refrigerator stack. While the refrigerator should never be connected directly into the drainage system, it is allowable under most plumbing codes to connect drinking fountains either directly or indirectly to the plumbing system.

If the drinking fountain is connected directly it should be vented, just as in the case of a lavatory or any other fixture.

If it is connected indirectly there should be no vent. As a matter of fact, the venting of any indirectly connected plumbing fixture creates a by-pass for the entrance of sewer and drain air.

In the accompanying illustration, Fig. 1, we show a line of refrigerators and drinking fountains connected into the same stack, in a manner that would be allowed by a large majority of plumbing codes.

Questions Answered and Discussed by Readers

How the Question Was Answered

The following question was asked in the issue of January 24, and the accompanying answer is by a reader:

A factory space near the engine room has to be warmed to 70 deg. Fahr. in zero weather with steam at 15 to 20 inches of vacuum, taken from the engine exhaust line ahead of the condenser. How would you select the proper size of unit heaters and how would you install the system?

How Would You Answer This Question?

Editor, DOMESTIC ENGINEERING:—*I have seen your problem of heating a garage below the level of the house in the February 21 issue and would be interested to know if any of your readers have a way of heating a garage from the heater in an ordinary home, where the water line in the steam boiler is only 18 in. below the surface of the ground outside. The problem would be to heat the garage with a single pipe steam line.*

I would be pleased to know if this could be done.

Framingham, Mass. *C. W. F.*

Answers based upon your experience, and suitable, will be paid for and published in the April 4 issue.

1

FOR a steam heating system that has to operate on such a low pressure as 15 to 20 inches of vacuum I would select unit heaters about 90% larger than the usual catalog rating. The reason for this seemingly exorbitant increase in size is that unit heaters are usually rated at pressures above atmospheric, whereas this job has to work at pressures far below atmospheric.

It is a problem of heat-exchange. In the ordinary case where unit heaters are supplied with steam at 5 lb. pressure the steam temperature is about 225 deg. Fahr., which in a recirculated room at 60 deg. Fahr., gives a temperature differential of 225 minus 60 equals 165 Fahr. degrees. In this particular case if the room temperature is 60 deg. Fahr. and the steam pressure is 20 in. vacuum, which represents approximately 160 deg. Fahr. at the engine exhaust main, dropping to perhaps 150 deg. Fahr. at the unit heaters, the differential will be about 90 Fahr. degrees. This is the prime reason for increasing the unit heaters so much when such high vacuum steam is used in them.

Regarding the actual installation of the system no doubt different engineers have different ways of going about it, and the method of each may be quite satisfactory.

The method the writer would adopt is outlined in Fig. 1. From the engine exhaust main and somewhere between the engine and the check, or back pressure valve, take off a branch to supply the unit heaters, and radiators, if any, on the heating system. This supply main to the heating system would be run the usual way,

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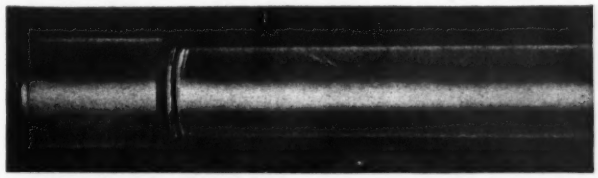

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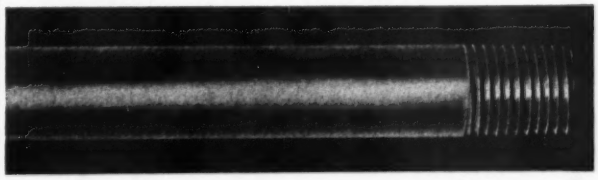

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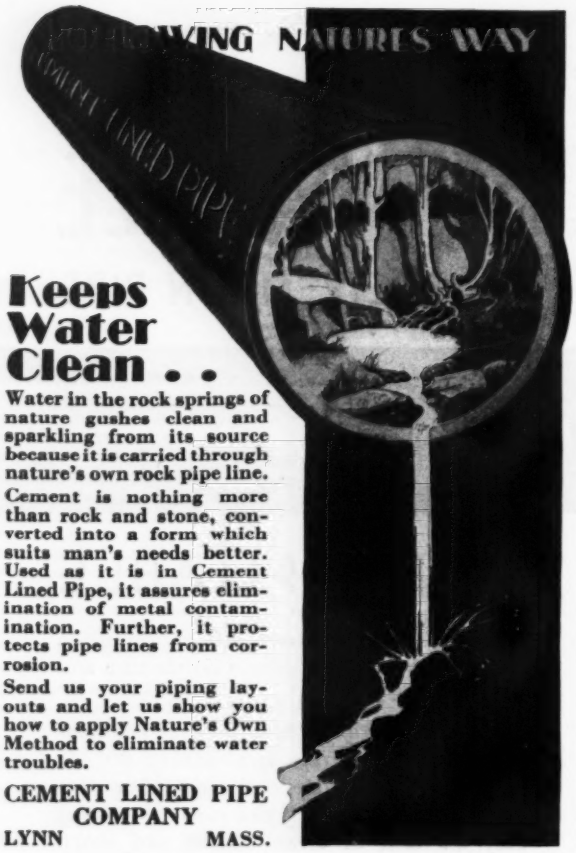

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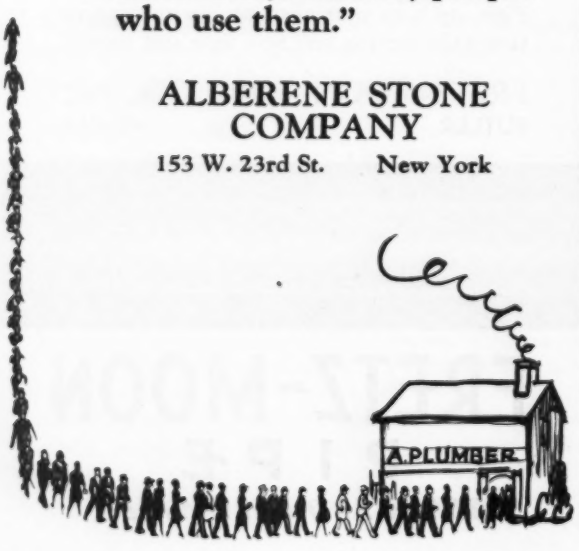

only a check valve, an oil separator, and a make-up live steam connection, would also be installed on the main.

The steam connections to the unit heaters would be made as usual only larger in size to handle the rarefied steam whose volume is vastly increased beyond that of an equal weight of steam at a pressure above that of the atmosphere.

The return from the unit heaters would each be trapped the usual way but both the traps and the return lines should be larger than usual, principally to handle

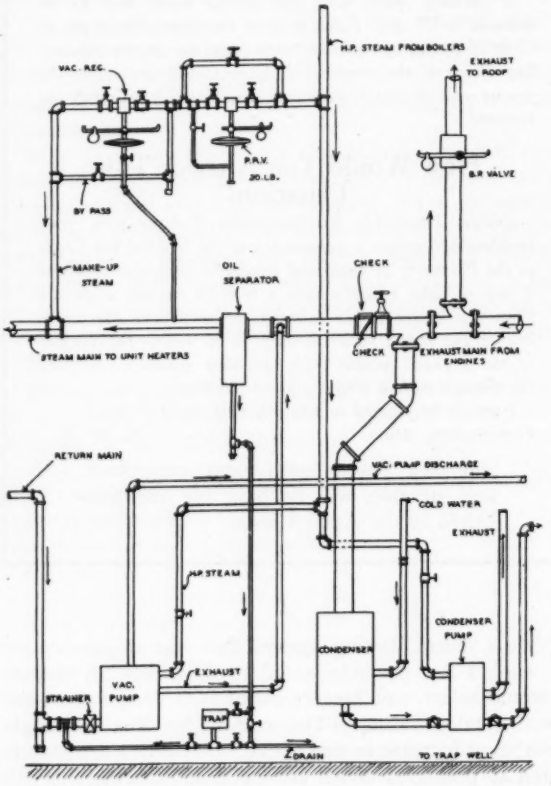

Fig. 1. Detail drawing showing how high vacuum steam taken from engine exhaust main can be utilized for heating a factory space most economically

the rarefied air that will travel through them with the condensate.

The return main would run back to a vacuum pump. The exhaust from this pump may go directly into the engine exhaust main on the engine side of the oil separator. It would then pass on to the heating system.

The vacuum pump has to be powerful enough to pull a higher vacuum in the heating system than the condenser pump pulls in the engine exhaust main. In plain words the vacuum pump steals enough exhaust steam from ahead of the condenser to supply the unit heaters, the surplus going to waste through the condenser and condenser pump. By this arrangement the factory space can be heated practically free of cost while the factory is running.

To heat the factory when the engines are shut down we provide a live steam connection with two by-passed pressure reducing valves. The first reduces the full boiler pressure down to somewhere around 20 or 25 lb, and the second reduces the pressure down to whatever

is found to be best suited to the job, which probably would be about 2 or 3 inches of vacuum higher than what exists in engine exhaust main. Then should the engine exhaust less steam than is required at the unit heaters the reducing valves will get in action and supply the necessary make-up steam.

The arrangement we show is not only economical in operation but also is automatic. When the engines are running the factory is heated by their exhaust steam which otherwise probably would go to waste. When the engines are not running, factory is heated by live steam.

Although the layout is extremely simple it is quite flexible. For instance suppose that the engineer, with the idea of saving fuel to the uttermost, dampens his boilers so that the steam pressure in them is only a few pounds above atmosphere during nights and Sundays, all he has to do with the heating system is to open the by-pass around the vacuum regulator. This allows the unit heaters to be supplied with live steam at a pressure anywhere between atmosphere and whatever the first regulator is set at, perhaps 20 to 25 lb.

The unit heaters would of course be automatically controlled by a thermostat which regulates the temperature of the factory space. For further fuel saving that thermostat can be operated to give say 65 deg. Fahr. during working hours and perhaps 50 deg. Fahr. when the factory is not running.

If the steam pressure should fall too low to operate the vacuum pump the condensation from the unit heaters can flow by gravity through the pump to the trap well.

There may be some more pieces of equipment that can be installed but we believe we have described enough to make the general arrangement quite clear.

Pennsylvania. L. T. H.

Using Waste Steam for Heating

(Continued from Page 51)

$40 \times 0.873 = 34.92$ lb. per kilowatt hour of external work actually done by the steam. The total heat of the steam under the conditions as fed to the turbine is 1,195 Btu per pound.

The heat extracted in external work $= \frac{3{,}415}{34.92} = 97.74$ Btu per pound of steam. To this add 1½ per cent for heat lost by radiation, or $97.74 + 1.47 = 99.21$ Btu which is the total heat loss per pound of steam in passing through the turbine. This leaves $1{,}195 - 99.21 = 1{,}095.79$ Btu in each pound of the exhaust.

If the exhaust is to be used and condensed at atmospheric pressure there will be a further deduction of 180 Btu per pound for the heat of the liquid at this pressure. This leaves $1{,}095.79 - 180 = 915.79$ Btu per pound of steam fed to the turbine as being available in the exhaust for heating at atmospheric pressure.

In a similar manner the heat available per pound in the exhaust from an engine driven unit for heating may be estimated by dividing the heat equivalent per unit of work by the number of pounds of steam fed to the unit per unit of actual external work done, adding to this from 1 per cent to 2 per cent for radiation, and subtracting this sum from the total heat in a pound of the steam as fed to the unit and then subtracting from this remainder the heat per pound in the condensate or rejected steam leaving the heating system.

In the case of an engine-driven unit, the heat equivalent of a horsepower hour (2,546 Btu) should be di-

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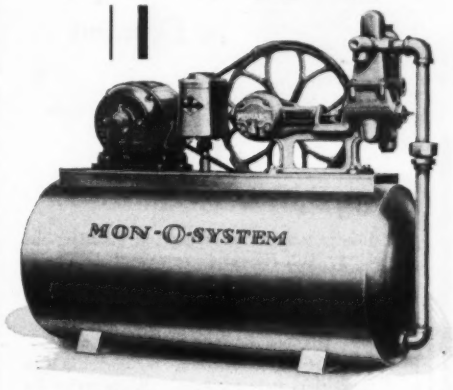

V. 233

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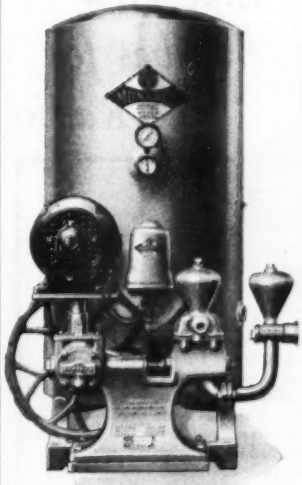

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vided by the water rate per indicated horsepower. If the water rate is given per kilowatt hour delivered by the generator, this may be reduced to pounds per indicated horsepower hour by dividing by 1.34 and multiplying by the mechanical efficiency of the unit and the efficiency of the generator.

Example. A 200-kw., engine-driven unit is operating under the same conditions as the turbine unit in the preceding example, and delivering one kilowatt hour on 37.8 lb. of water.

The mechanical efficiency of the unit is 0.905 and the efficiency of the generator is 0.934 (See Table 1). The water rate per indicated horsepower is therefore

$$\frac{37.8}{1.34} \times 0.905 \times 0.934 = \frac{37.8}{1.34} \times 0.845 = 23.84$$

The heat equivalent of the external work done per pound of steam is $\frac{2{,}546}{23.84} = 106.79$ Btu. To this add 1½ per cent for radiation, or $106.79 + 1.60 = 108.39$ Btu which is the total heat lost per pound of steam in passing through the engine. Deduct this from the total heat per pound in the steam fed to the engine, or $1{,}195 - 108.39 = 1{,}086.61$ Btu.

Code Study Reveals Wide Difference in Venting Practices

(Continued from Page 79)

to one vertical waste pipe, the special back-air pipes may be dispensed with by increasing the size of the waste pipe in proportion to the number and location of fixtures attached thereto." In Fig. 1 we show an elevation which illustrates the foregoing ordinance. It seems to us that if it is considered desirable to install such a system of plumbing without vents, the practice should be much more closely defined than it is. A plumbing code should never make it necessary that pipe sizes be decided upon according to individual judgment, whether of the plumbing contractor or the plumbing inspector.

Another unusual ordinance is this: "The use of long or short S-traps on traps made up on the same principle, will be permitted when the same are properly vented from the crown of said trap or where the leg on the sewer side of the said trap, from the crown to where the same joins the soil or waste lines is not longer than the depth of the seal in the trap, their use will be permitted." It is generally considered that S-traps are so little used today, that it is not necessary to give them consideration in a plumbing code.

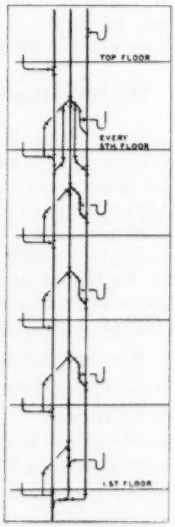

Fig. 6

Another layout of plumbing as allowed in Dunkirk is seen in Fig. 2, this being for a two-family house. There are inconsistencies in both these elevations, especially in the matter of stack sizes and main vent sizes. Stacks should not be decreased in size, but continue full size through the roof.

Geneva, N. Y., has the following regulation: "One

fixture may enter closet bend and serve as a vent for the closet, provided the waste and vent are equal to 2 in. in diameter. Two fixtures may enter the same closet bend and serve as a vent for the closet, provided the wastes and vents of both fixtures are equivalent to the diameter of a 2-in. pipe." Figs. 3 and 4 show the interpretation of this ordinance. Fig. 4 shows a rather unusual feature, in that two connections into a closet bend are in combination considered a proper vent for the water closet. Generally, the wet venting of such a fixture is limited to the waste and vent connection from a single fixture. We see no reason why the two fixture wastes and vents, as long as their combined area equals the area of a 2-in. vent, should not be considered an adequate vent.

Another Geneva ordinance is the following: "When the waste of a bath tub is connected to the lavatory waste, the bath trap need not be vented, provided this connection is within 3 ft. of the bath trap and trap not more than 18 in. from point of connection with tub outlet and waste and vent of lavatory 1½ in. pipe." This is illustrated in Fig. 5.

1½-in. Water Closet Vent Unusual

Reference to the third column of the tabulations shows that a number of the Minnesota and Missouri cities allow 1½-in. water closet vents. This is unusual, and we were not aware that anything smaller than 2-in. was being officially used anywhere.

Niagara Falls has an ordinance which allows washout and siphon water closets above the basement to be installed without vents when the fixture is vented through the waste and vent connections of some other fixture. As we see it, this means that wet vents may be used on water closets above the basement. Just why a basement water closet should not have a wet vent when water closets on floors above are allowed to use them, we do not see. There are many plumbing ordinances used which seemingly are unexplainable. Often, no doubt, these exemptions creep into a code through some individual opinion, based on personal experience, or owing to some local condition.

According to a statement made by A. R. McGonegal, president of the American Society of Sanitary Engineering and chief plumbing inspector of Washington, D. C., when he receives his copy of Domestic Engineering containing the code tabulations, he tears out the pages of code material and tacks them on the wall of his office.

Cities Adopt Hoover Code

In the next column, the one on circuit and loop vents, it will be observed that a number of codes contain an ordinance allowing the use of such vents on 2 to 8 water closets and certain other fixtures. These cities

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No matter what the caprices of the month of March, snow or blow or anything else, Oatey Roof Flashings remain as tranquil, as undisturbed as they are in June.

Replace with Oateys those that loosen up in the March winds and let moisture through. Ask your jobber to send you half a dozen for those emergency calls. Do it now.

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An amazing record of 38 years of experience in the designing and manufacturing of air valves is behind the basic patents of KELLY VALVES. Their simple, sturdy, fool-proof construction insures years of long, hard, dependable service, yet permits them to be priced lower than any other five-year guaranteed, steam and vacuum tested, quality valve.—Write today for our descriptive Price List illustrating our complete line of seven non-adjustable, automatic, steam, air or vacuum valves that will fill every requirement for a gravity one-pipe atmospheric or vacuum type heating system.

To vacuumize a one-pipe steam heating system and insure quicker response to boiler temperatures, maintain heat in the radiators several hours after the steam pressure has gone down with an appreciable saving in fuel, lessen firing periods and assure greater comfort and more even temperatures INSTALL KELLY No. 2 VACUUM VALVES ON EACH RADIATOR AND KELLY No. 6 QUICK VENT AIR VALVES ON EACH DRY RETURN LINE.

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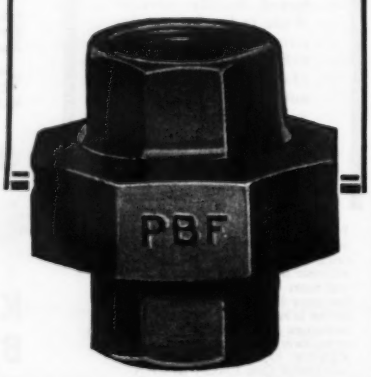
P. B. F.



Phoenix Brass Fittings Corp.
IRVINGTON N. J.

are those which have adopted the Hoover code. The complete wording of this ordinance is the following: "A circuit or loop vent will be permitted as follows: A branch soil or waste pipe, to which two and not more than eight water closets, pedestal urinals, trap standard slop sinks, or shower stalls are connected in series, may be vented by a circuit or loop vent, which shall be taken off in front of the last fixture connection. Where fixtures discharge above such branch, each branch shall be provided with a relief one-half the diameter of the soil or waste stack, taken off in front of the first fixture connection."

It will be noted that most of the codes shown in this tabulation prohibit the use of wet vents. In several instances it will be noted that they are "allowed under certain conditions." This provision appears in connection with those cities which have adopted the Hoover code. This code does not specifically state that wet vents are allowed, but the report which accompanies the code, deals extensively with the subject of wet vents, arguing for their use in the effort to simplify plumbing practice. We have, therefore, taken it for granted that cities which have adopted the Hoover code have probably also adopted the practice concerning wet vents, advocated in the Hoover report. This practice is largely confined to their use in connection with bathroom installations.

Some of the special features noted in the last column of the tabulation are as follows:

Two of the Missouri cities state in their codes that no down-draft vents shall be used on new work. This is a new term to us, and we do not know what a "down-draft" vent is. Joplin, of the same state, has an ordinance allowing the Rand or other equal ventilating system to be used when it is not possible to vent. We would greatly appreciate a description of this system.

Command Attention with Proper Window Lighting

(Continued from Page 42)

of windows a 12-inch spacing is very common. A spacing over three feet will not, in general, give satisfactory illumination. In practice, then, the spacing usually falls within the range of 12 to 36 inches, with a spacing between 12 and 15 inches in the majority. Outlets should be available for the use of spotlight or floodlight projectors when desired. A choice of 150, 200 or 300-watt Mazda C or Mazda Daylight lamps allows a variation in window illumination for any particular location or type of display. When once an adequate number of outlets has been installed, the illumination can be varied at will by manipulating the size of lamp used, or by arranging the lamps on two or more circuits so that alternate lamps may be turned on or off. Convenience outlets should be placed in the side walls or perhaps in the floor of the window for attaching lamps or other electrical appliances which are on display or which might be used to contribute to the effectiveness of other displays.

◆

Clinton, Ia.—George Hardeen, formerly with the C. J. Johnson Co., has engaged in the plumbing and heating business at 849 Eleventh avenue, South.

Birmingham Association Plans Educational Program

The Birmingham Association of Master Plumbers has mapped out a progressive program for 1931 under the capable direction of President S. E. Scholze and Secretary-Manager J. M. Boggan. All officers were re-elected at a recent meeting, including Mr. Scholze as president, Mr. Boggan as secretary-manager; J. H. Hammill, treasurer, and R. C. Parker, vice president.

The association is undertaking an educational program for its members and is also proceeding to work up a co-operative remodeling job such as was recently undertaken at Corvallis, Ore., by the plumbing and allied trades of that city. Already the co-operation of the chamber of commerce and the Birmingham newspapers have been pledged in carrying out such a project as initiated by the association. The work in Corvallis, Ore., was described a number of months ago in DOMESTIC ENGINEERING.

A plan is also being promoted for closer co-operation with the local gas company in the installation of gas heating equipment.

◆

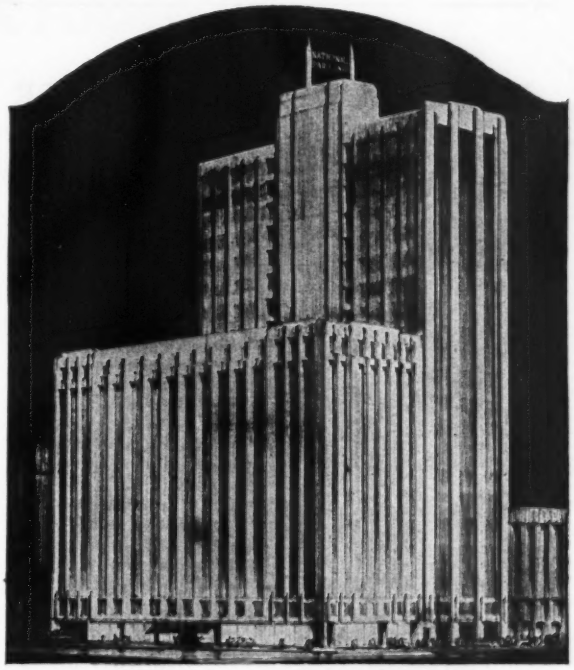
North Hudson Masters Hold Annual Party

The Master Plumbers' Association of North Hudson, N. J., holding its thirty-first banquet and dance on January 31 at The Hermitage, Union City, N. J., entertained approximately two hundred guests. While dancing held sway between the dinner courses and later in the evening, a number of speakers were heard.

At the speakers' table were seated National Director George H. Werner of Orange with Mrs. Werner; Past State President William Chesnut of Montclair with Mrs. Chesnut; E. P. Ingram, president of the Jersey City association, with Mrs. Ingram; Past State President John J. Corcoran of Jersey City with Mrs. Corcoran, president of the New Jersey State Women's Auxiliary; George Buess, president of the North Hudson association, with Mrs. Buess; Edward B. Moore, state field secretary; Victor Kilkenny, city counsellor of North Bergen, N. J.; Alex F. Berg of Orange, president New Jersey state association with Mrs. Berg; George Brenner, former president of the Orange association, with Mrs. Brenner, and Mr. and Mrs. Alex Thane of Weehawken, N. J. Other out of town guests were Mr. and Mrs. Charles Werner of Jersey City; Edward J. Geyer of Bergenfield, member of the New Jersey State Board; L. C. Borrows of Hackensack, with his daughter, and Mr. and Mrs. A. G. Trapper of East Orange.

William T. J. Orriss of Union City, past president of the state association, acting as toastmaster, supplementing his presentation of those at the speakers' table and President Buess, for his formal welcome, said, "I do not recall ever having had the pleasure of addressing a more loyal body in all my years of work with the association and your demonstration of unfaltering loyalty in face of disrupting efforts of a certain dissatisfied group is most gratifying to say the least." President Buess, after welcoming the guests, gave his assurance that on the strength of the exhibition of loyalty, 1931 cannot help but be a banner year in the affairs of the North Hudson association.

National Director Werner also added his expression of



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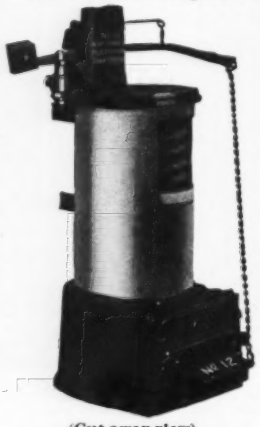

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gratification at the loyalty of the members shown by their presence, and spoke briefly on national affairs.

State President Berg also commented on the proof of loyalty exhibited and credited the North Hudson association as being one of the outstanding organizations in the state. He also complimented the women's auxiliary. With reference to the forthcoming state convention, he said: "Your board of directors sets the date of the meeting and chooses the place but you and the other members make the convention; therefore it behooves you all to participate in it on May 26-27 at Trenton.

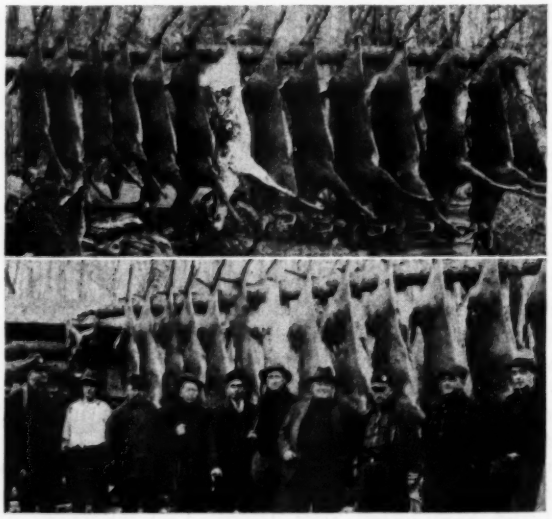
Mrs. Corcoran added her expression of happiness at being present and on behalf of the North Hudson auxiliary presented Mrs. William T. J. Orriss, president of that organization, with a bouquet.

The committee arranging for the affair was as follows: D. F. Thurnau, chairman; H. Bunker, Jr.; N. Triani, E. Wittreich, F. Kasper, A. Thane, Sr., T. Ducate, C. Werner, H. DePrato, W. Hammerle and F. Baker.

◆

Hunters Bag Many Deer

George T. Noyes, president of The Allen Plumbing Co., Presque Isle, Maine, and past president of the Maine Master Plumbers' Association, headed a ten-day hunting expedition recently to the Baker and Powers Camp on



The top picture shows a close-up of the deer, bobcat and fox killed by the hunting party led by George T. Noyes of Presque Isle, Maine, former president of the Maine Master Plumbers Association. In the lower picture are members of the party: George T. Noyes, Charles Noyes, W. H. Southard, A. H. Oleson, all of Presque Isle; N. A. Horsman, Syracuse, N. Y. William Burke, Augusta, Me. Philip Eaton, Portland; F. A. Armstrong, Syracuse, N. Y.; W. W. Noyes, Mars Hill, Me., and John Lewis, Lebanon, N. H. Messrs. Powers and Baker were absent from camp when picture was taken, and Dr. F. A. Brigham of Portland is only partially in the picture, at the extreme left

the Presque Isle river. The party of fifteen killed a bob cat, a fox, and thirteen deer, among them one with seventeen points. One deer was white. According to available statistics, this is the largest number of deer ever brought back by one hunting party. Mr. Noyes was accompanied by his son, Charles, and his brother, W. W. Noyes.

Legal Questionnaire

Answered by "The Judge"*

Rights of House Owner Who Enters into Contract with Solicitor Who Fraudulently Signs Name of a Master Plumber

Editor, DOMESTIC ENGINEERING:—A plumbing supply company has solicited a contract from a house owner to install plumbing, heating and all fixtures to said plumbing, in accordance with the plumbing rules and regulations of the City of New York.

The house owner, who was under the impression that the solicitor was a licensed plumber, as he represented himself to be, signed said contract, and agreed to make a payment upon completion of the roughing work (which he did), and another payment upon completion of the job. And a balance of $500 to be paid in 10 monthly payments, plus interest.

The plumber who secured the roughing payment, which was greater than the amount of the work done, refused to complete said work until he received $300 for the purchase of a steam boiler, leaving only balance of $200 to be paid.

Upon careful investigation, the owner discovered that the solicitor had signed the contract in the name of another plumber who was licensed and then signed (by error) his own name to the receipt when he received payment for roughing work.

Your kind advice in this matter will be greatly appreciated.

Brooklyn. S. N.

Answer:—Your question involves so many facts that might be disputed in court, although perhaps not successfully, that the answer can not very well be definitely made until the case has been threshed out in court and the court's decision filed. For instance, as far as the house owner's rights are concerned, it is important to know whether he entered into the contract principally because a certain master plumber was to do the work, or whether it was immaterial to him what master plumber did it, as long as it was done properly.

In other words, would the house owner have been perfectly satisfied if the work had been completed according to the contract which he made with the plumbing supply house solicitor? If he would have been satisfied, and the contract had been carried on as agreed, it is probable that he could not object when he learned the real facts.

In any event, under the circumstances which you state, the house owner has a right to put an end to the contract as soon as he discovers the legal fraud which has been perpetrated. Even without the presence of fraud in the case, the contract is not being carried out as agreed upon, because the house owner has been asked to make a payment of $300 for the purchase of the boiler, instead of making 10 monthly payments with interest on the balance now due on the contract. It follows that the house owner has the right to bring suit against the plumbing supply house, if the solicitor was its agent in this case, for damages. He can finish the contract through some other plumber and sue the plumbing supply house for the extra cost to which he may reasonably have to go to complete the work, over the contract price.

If the payment which the house owner made for the roughing work is not too much more than the actual value of the roughing work, it is probable that it will be less expensive for him to break the present contract and find somebody else to complete the work, than to insist upon his technical legal rights against the plumbing supply house or the solicitor, and try to secure damages from them.

It very frequently happens that a party has some perfectly good legal rights which it will cost him more to carry through than they are worth. Unless the house owner in your case paid a great deal more for the roughing work than it is worth, I should say that he would be better off to have the job finished himself and perhaps make a demand upon the plumbing supply house for damages, if they are worth making a fight for, after it has been determined what they amount to.

◆

Emergency Installation of Boiler on Cold Sunday, Made on Credit—Rights of Parties When Owner Refuses to Pay

Editor, DOMESTIC ENGINEERING:—We have had considerable trouble collecting for replacement boiler installations, after installation.

Here is a typical case: An apartment house owner's boiler burst on account of lack of water. At the time this happened it was severely cold and it was necessary to make the boiler change immediately. Also, as it was Sunday, it was impossible to get his credit rating.

The owner agreed to pay 50 per cent of the cost of installing the new boiler as soon as the boiler was installed. The balance was to be paid in two equal payments, thirty and sixty days after installation. These two payments were to be secured by two notes.

After the installation had been completed the owner failed to make the 50 per cent payment agreed upon, and refused to sign the notes, saying that he was trying to finance the boiler through some finance company, and has held off payments for two months.

Is it possible to secure an injunction prohibiting the use of this boiler until payments are made as agreed? Of course, we can file a lien and start suit, but in the meantime this boiler is being used and it seems as if there should be some recourse other than a long drawn out suit.

Have you any advice to offer on this subject?

Colorado. N. J. E.

Answer:—The extension of credit is one of the

* Every effort is made to the end that these answers may be authoritative. However, we cannot assume any responsibility because of the very nature of the service, which is rendered without a personal interview.—Editor.

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Also in the Hotels Ambassador, Drake, Ritz Tower, Delmonico, Mayfair, Belmont, Waldorf-Astoria; in such office buildings as the New York Central, Park Lexington, Postum, No. 1, No. 2 and No. 101 Park Ave.; as well as in the Union League Club and the Lenox Hill Hospital.

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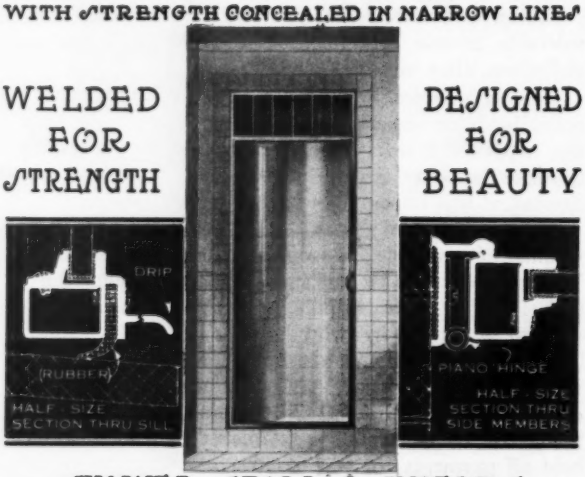

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serious problems confronting business men in these days of business depression. Everybody is keen to do business; the seller to increase his diminished sales volume, and the buyer to purchase necessary things of all kinds. In the case you speak of, the work was of an emergency character, which the owner had to have done by hook or crook. You were willing to do it, and take your chance that he would keep his word and was financially able to pay you.

A business man who extends credit is always taking chances, even where a credit rating is found to be of the very best. He must decide at the time of extension of credit whether he wishes to take the chance. If he does, thereafter his rights and remedies are governed by his giving of the credit. He cannot very well extend credit and then later decide for some reason, principally because he has not been paid, that he wants security for his sale. This is so because he has agreed to do one thing, namely, to extend credit, and now wants to make an agreement, either expressly with the other party or by some legal rights which he may have, which is another contract entirely.

I know of no way in which you can secure an injunction against the use of the boiler which you sold on credit.

If you could secure an injunction in your case, so could a tailor who sells a suit of clothes which is not paid for as agreed; a grocer who sells a barrel of flour; and so on interminably in so many cases that the use of anything bought on credit could be forbidden by the courts unless payment is made by the buyer and our entire system of credit extension would be turned upside down.

It is barely possible, although not very probable, that you might have a right to ask the court for a criminal warrant on the ground that the owner secured your goods and labor under false pretences. I say that this is not very probable, because in the ordinary case of credit extension, the courts will leave you to your civil suit remedies. Perhaps the fact that it was an emergency job had to be performed on Sunday, and you had no chance to secure a credit rating, might give you some right to secure a criminal warrant; but that is not probable.

In any event, be sure of one thing: Under no circumstances make any threats that you are going to take the owner into the criminal courts. Even though you have a perfectly reasonable and legal right to ask for a criminal warrant, it is blackmail, in most states, to threaten a person with criminal action unless he pays you money. This is so although the person making the threat has a perfectly good claim against the purchaser, and the purchaser has actually committed some crime. It is very dangerous to make such threats. If your attorney decides that you have some ground for asking for a criminal warrant, be sure to let him handle that phase of the case for you from start to finish. As I have said, I don't think much of your chances of success with a criminal warrant, even under the circumstances which you state.

I should say that you were fortunate to be in a position to file a mechanic's lien, and secure your payment even at some later date. It is much better to have a good claim on your books than to lose the money entirely.

St. Louis Contracting Plumbers Install Officers

The Contracting Plumbers' Association of St. Louis, Mo., held its 48th annual installation of officers on Monday evening, January 12, in the ballroom of the Hotel Statler in that city, with an attendance of 200 members and guests.

Jere Sheehan, Jr., past president of the National Association of Master Plumbers and at present a director of the National Association, acted as toastmaster. The festivities were opened by the singing by all members and guests of one verse of "America." A fine repast was then enjoyed, at the conclusion of which the serious business of the meeting was taken up.

Following the usual custom, memorial exercises were held for the members who departed this life during the past year. The toastmaster pointed out that the St. Louis and National organizations suffered a great loss during the year, through the death of some of its most outstanding characters, the National having lost President John A. Quinn and Treasurer A. C. Eynon, and, St. Louis, Lawrence McNamara, a past president of the National and local associations and the father of the Trade Extension idea; Henry Moore, a past president of the local association; August Heil and James A. McBride.

He then installed Fred J. Timmermann as president; Bernard Braun, vice president; Aug. A. Meyer, secretary; Chas. Burgess, treasurer; and D. C. Cunningham, Jos. Knoll, D. E. Hannegan, Sam Burman and Edw. Monteath as directors. The above officers and the five directors constitute the board of directors.

The members and guests received a rare treat in the speech of Robert J. Kratky, counsellor, who covered the subject of "Taking the Public into Your Confidence," in a very able manner. The high light of his discourse being "What is necessary to build an effective organization?" citing three principles that should be followed. "First, all of those with common interests should band themselves together; second, those so banded together should understand one another and their objective, and the public should understand them and their aims, and, third, the organization should sustain its effort."

P. H. Callahan, who has never missed an installation of officers, was on hand as usual and felicitated the organization on the progress that has been made in the past forty-eight years. Since the installation would not be a success without a recitation from Mr. Callahan, who, by the way, is the only retired sanitary engineer in the city, he very graciously obliged with the recitation, "When Casey Slugged the Ball."

One of the most instructive and interesting talks ever heard by the members of the association was delivered by T. W. Merryman of Chicago, who explained in detail the possibilities of the Certified Plumbing Plan, which, in his opinion and in the opinion of a great many others, is the only means of giving the contracting plumbers' associations throughout the United States their proper identity.

Fine entertainment was provided by the entertainment committee, composed of H. H. Schlapprizzi, Jos. T. Sheehan, E. J. Gartland, Jas. J. Noble and John H. Weiler, chairman.

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RIVERSIDE

Woman's Page

Co-operation is the essential factor in the plumbing and heating industry. Do we all realize fully that these friendly parties and socials reported below are important in promoting that spirit? Do we take advantage of the opportunities presented at these meetings to create programs that help the master plumbers and heating contractors. Take a few minutes at your next meeting, to discuss the problems met by home owners in remodeling. With a suggestion from each member present at your meeting, a fine program can be arranged and presented to the master plumbers and heating contractors. This is the finest spirit of co-operation.

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Indianapolis Auxiliary Prepares for State Convention

The regular monthly meeting of the Women's Auxiliary to the Merchant Plumbers' Association of Indianapolis, Ind., was held at the home of Mrs. Tyra Collins on February 6. The meeting was called to order by Mrs. George T. Watson, president. The following responded to the roll call: Mrs. John J. Anderson, Mrs. A. C. Backemeyer, Mrs. Herbert S. Bauer, Mrs. Richard J. Bardy, Mrs. Tyra Collins, Mrs. Howard Deer, Mrs. Lawrence E. Isley, Mrs. J. A. Kregle, Mrs. Joseph Lauber, Mrs. Henry R. Meyer, Mrs. Glenn Petty, Mrs. Chas. F. Trosky, Mrs. G. T. Watson, Mrs. E. C. Wiebke.

The minutes of the previous meeting were read and accepted and also the report of the treasurer, Mrs. John J. Anderson. It was announced that the card party held on January 30 was a success, financially.

It was voted to accept the offer of L. K. Ascher to assist the auxiliary in entertaining the visitors at the coming state convention. A special meeting of the members of the auxiliary and their husbands was held on the evening of February 7, at which time plans for the state convention were discussed. This was followed by a social hour. A delightful luncheon was served by Mrs. Collins, assisted by Mrs. J. A. Kregle.

The March meeting will be held at the home of Mrs. Kregle, 2322 Nowland avenue, on Friday, March 6.

Wilmington Auxiliary Holds Parties and Meeting

At its regular monthly meeting in January the Women's Auxiliary to the Wilmington, Del., Master Plumbers' Association donated the sum of ten dollars to the National scholarship fund. The meeting was attended by twelve women, according to word received from Mrs. Edith McLean, secretary. Plans were made at this time for the card party which was held at the home of Mrs. James Wharry on February 7 and arrangements were also made for the meeting held on February 20 at the home of Mrs. Walter Smith.

Mrs. Wharry and Mrs. Edward McLean were hostesses for the January monthly meeting. The table decorations were in pink, and cherry pie, ice cream, tea, coffee, nuts and candies were served.

The members of the auxiliary were entertained by the master plumbers' association with a dinner on the evening of February 3. The affair was held at McConnell's tea room and the evening was an enjoyable one. Mr. and Mrs. Frank Escott told of their recent trip to Florida. Little brown jugs were given as favors. Harry Bell was chairman of the committee in charge of arrangements. Albert Hayman, president of Wilmington Master Plumbers' Association, and Mrs. George Barnett, president of the auxiliary, spoke briefly.

Many Attend Boston Meeting

The December meeting of the Women's Auxiliary to the Master Plumbers Association of Boston and Vicinity having been omitted, the January meeting of this association was held at the home of Miss Mary McKenna on Beacon Hill, Boston, January 20. The attendance was one of the largest of any meeting the auxiliary has held since its inception. All were entertained for more than an hour by Charles A. Stone, W. J. Marshall and Mr. Hagendorn. Moving pictures of the Boston national convention were shown. Delicious refreshments were served and a most delightful evening was enjoyed.

The Boston auxiliary held a successful luncheon and bridge at Mrs. Richardson's food shop on January 13. There were twelve tables. A substantial sum was added to the treasury, and the members and their guests enjoyed a pleasant afternoon.

Top picture: Some of the ladies attending the Ohio convention. Lower picture: Miss Florence Ellinger, Springfield; Mrs. A. W. Baum, Canton; Mrs. Harry S. Smith, Warren, and Mrs. Charles W. Wilson, Youngstown. Photos taken at the annual convention of the Ohio Master Plumbers Association, held recently at Canton

Tells Women About Air Conditioning

Margaret M. Ingels, graduate mechanical engineer of the University of Kentucky at Lexington, is the first woman air conditioning engineer. Miss Ingels, a member of the organization of Carrier-Lyle Corp., Newark, N. J., to promote more general understanding of air conditioning as an important health factor, is directing an educational program among the women of America and is appearing before leading women's clubs throughout the country. In this connection Miss Ingels has this to say: "The woman's club today is one of the greatest single factors in the cultural and educational life of America. The day is past when the neighborhood sewing circle typified women's club activities. The modern woman's club sets the standards of the community for progress. For that reason I shall look forward to talking to progressive modern women about so fundamental a subject as proper air conditioning of the home based on scientific research directed towards safeguarding the family health and comfort."

Margaret M. Ingels

One of the few women to earn an M.E. degree, Miss Ingels after her graduation became connected with the traffic engineering department of the Chicago Telephone Co. and later with the Pittsburgh research laboratories of the A. S. H. & V. E. at the United States Bureau of Mines. She was secretary of the Pittsburgh chapter of the society from 1925 to 1927 and has just been made a member of the New York chapter. Last year she became a member of the A. S. M. E. Prior to becoming connected with the Carrier-Lyle organization, Miss Ingels spent two years with the New York Commission on Ventilation at Syracuse and an equal length of time with the Carrier Engineering Corp. at Newark, N. J.

New Brunswick Auxiliary Gives Card Party

The annual card party of the Ladies' Auxiliary to the Master Plumbers' Association of New Brunswick, N. J., was held on February 9, at the Woodrow Wilson hotel. All the popular card games were played. Refreshments were served during the playing. Mrs. A. Mulready was chairman of the committee in charge.

North Hudson Auxiliary Elects Officers

The Women's Auxiliary to the Master Plumbers' Association of North Hudson, N. J., at a recent meeting elected Mrs. Clyde C. Cole of Weehawken, vice president, and Mrs. Henry Bunker, Jr., of Union City, secretary. Mrs. William T. J. Orriss and Mrs. Nicholas Triani, both of Union City, are president and treasurer respectively. The trustees are Mrs. Mary Menegaux of Union City; Mrs. Fred Baker of Guttenberg, Mrs. D. F. Thurnau of North Bergen, and Mrs. M. Markel of Union City.

The organization selected February 28 as the date on which to give its annual masquerade. The affair was held at The Hermitage, Union City, N. J. Mrs. William Jacobs of Union City was in charge of the arrangements, assisted by Mrs. Triani, Mrs. Thurnau, Mrs. Markel, Mrs. Bunker and Mrs. Orriss, ex-officio. Many of the ladies wore exceedingly attractive costumes and were awarded with worth while prizes.

Our New Pocket Size Catalog "G"

is just off the press showing a complete line of Artcraft Fixtures and other new items.

Write Dept. "S" for your copy

Milwaukee Flush Valve Co.
Milwaukee, Wisconsin

Easier to Handle

Unusual quality throughout makes it easy to cut it cleanly. The entire pipe is unusally strong, so chances of breakage are far less than with ordinary pipe.

EXPAN HUB SOIL PIPE

Manufactured to uniform specifications and sold by

ALABAMA PIPE COMPANY
ANNISTON FOUNDRY CO.
INTERSTATE FOUNDRY COMPANY
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THE WETTER PIPE CO.

For All Size Pipe Hangers

E-Z INSERT

7 IN 1

Use this economical and efficient insert that accommodates seven sizes of rod and pipe—¼, ⅜, ½ and ⅝-inch rod, and ¼, ¾, and ½-inch pipe. Used for all sizes of pipe hangers. It is adjustable, allowing for expansion and alignment. Ball and socket arrangement between insert and hanger. No coupling or turn buckle needed—E-Z button turns in the insert.

Write for complete information and prices.

Healy-Ruff Co. 770 Hampden Ave. St. Paul, Minn.

Also Manufacturers of E-Z Radiator Hangers and E-Z Lavatory Hangers

AUTOMATIC . . . *without servicing!*

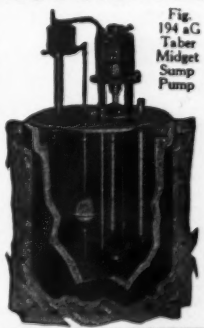

Fig. 194 aG Taber Midget Sump Pump

Automatic is one thing . . . and automatic *without servicing* is another.

The positive automatic operation of Taber Sump Pumps is unattended by periodic servicing. Install it . . . then forget about it. You have provided Dry Cellar Insurance.

Low prices on Taber Sump Pumps make them still more desirable. Write for descriptive literature and prices See Page 923 Domestic Engineering Plumbing and Heating Catalog.

TABER

TABER PUMP CO. *Est 1859*
290 Elm Street, Buffalo, New York

LAY THE CORNER STONE NOW

Get ready. You are fast working into the active season.

The Home Heating Man with a selling agency for COLUMBIA Burners has found business good in the season just passing.

The Public is through with hard fuel and its attendant woes. He is sick of it. And this passing winter's experience has petrified his decision to henceforth have nothing but Automatic Gas Heat.

Safe and trouble-proof, the COLUMBIA Gas Burner, Conversion Type, has proved itself. It has no competition. It stands alone, the peer of all home heating equipment.

Hence we say, "Lay the corner stone now for the season almost here." Put in your bid for territory and selling rights for this astonishingly efficient piece of home heating equipment. Know the COLUMBIA Burner and what it stands for in your field. Address the Columbia Burner Company, 1645 Dorr Street, Toledo, Ohio, and you will receive full information by return mail. To insure territorial selection, write today.

CUTS PIPE THREADING COSTS!

A full-fledged Portable Pipe Machine for Reaming, Chamfering, Threading and Cutting Off Pipe from ⅛" to 2".

Uses any standard make of solid square right or left hand pipe or bolt dies.

Weighs 250 pounds. Operates off either A.C. or D.C. lighting circuits. Is sufficiently powered to drive geared heads on the larger pipe, up to 6 inches. A real pipe machine at a price you can afford. Ask us about it today. Give us the name of your supply dealer.

THREADS RAPIDLY

PEERLESS MACHINE CO., Racine, Wisconsin
Eastern Canadian Representative:
J. Edwin Newsome, 161 Castlefield Ave., Toronto, Ont., Canada

Moore Hangers

You have no bolts to supply, no cutting to do and no tedious measurements to take to install Moore Hangers. Everything is supplied complete and the wide range of adjustability of the Moore makes approximate measurements accurate enough. Install them on new and remodeling jobs.

From your jobber

Carty & Moore Eng. Co., Inc.
611 W. Larned St. Detroit, Mich.

Check DART UNIONS for Uniformity

Take any two Dart Unions made at any time—a day or a year apart—and check them for even a slight difference either in design, metal or workmanship.

The guaranteed Union with 2 BRONZE TO BRONZE 2 ground Seats.

E. M. DART MFG. CO.
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The Fairbanks Co., Sales Agents
Canadian Factory, Dart Union Co., Limited, Toronto, Canada

Salt Lake City Women to Push Sanitation Bill

The Ladies' Auxiliary to the Salt Lake City Association of Plumbing and Heating Contractors held its regular monthly meeting at the home of Mrs. Will Rees. Mrs. Henry H. Bockholt, president, and Mrs. Robert Snedden, past president, were appointed a committee to co-operate with the masters in promoting the bill providing for state control of sanitation and installation of plumbing, under the direction of the state board of health. Current business matters were discussed and refreshments enjoyed.

Detroit Auxiliary Meets

About twenty-eight members of the Detroit Women's Auxiliary met recently in the rooms of the Cadillac Athletic club, where a delicious luncheon was served. Afterward the auxiliary went to the Lafayette theatre. Many thanks are due to Mrs. A. Hempel and her committee, who had arranged this gathering.

Hutchinson Women Donate to Charity

The Women's Auxiliary to the Hutchinson, Kans., Master Plumbers Association held its regular monthly meeting on January 12 at the home of Mrs. K. Sawyer. During the business proceedings it was voted to give $5.00 to help a needy family, besides the usual basket that is filled each month. Later refreshments were served.

The February meeting of the Hutchinson auxiliary was held at Mrs. A. P. Riggs' home. Refreshments were served, after which a social hour followed. The next meeting is to be held at the home of Mrs. W. T. Polley, 123 West 23rd.

Columbus Auxiliary Elects New Officers

The Columbus, Ohio, ladies' auxiliary met with Mrs. Kel Osborn recently for the regular business meeting. An election of officers took place, which resulted in the selection of Mrs. Ida Oelgetz as president; Mrs. Verda Duffy, vice president; Mrs. Clara Schneider, secretary-treasurer; Mrs. Margaret Glass, corresponding secretary; Mrs. Nettie Smith, local publicity, and Mrs. Belva McDonald, chairman of social affairs. After plans for the coming year were discussed, a delightful lunch was served by the hostess.

On February 19, the members of the auxiliary, with their husbands, gave a surprise party for William Schneider, newly elected vice president of the state association. The evening was spent in playing cards, after which all enjoyed a midnight luncheon.

Rock Island and Moline Auxiliary Elects Officers

The Women's Auxiliary to the Rock Island and Moline Master Plumbers Association met recently at the Y. W. C. A. in Moline, Ill., with Mrs. Charles Stange as hostess.

The following officers were re-elected: Mrs. Charles Stange, president; Mrs. P. H. Kale, vice president; Miss Mildred Lamp, recording secretary; Mrs. M. L. McKay, treasurer. Mrs. Walter Forssman of Moline is the newly elected corresponding secretary.

At the close of the meeting refreshments were served in the dining room and a social hour was enjoyed.

Mrs. P. H. Kale entertained the auxiliary on February 9.

The regular routine business was transacted. The vice president, Mrs. P. H. Kale, who was alternate to the recent state convention at Danville, gave a very complete report of the convention.

It so happened that it was Mrs. Melvin L. McKay's birthday while attending the convention at Danville, and when the ladies found that out a surprise party was given Mrs. McKay.

Mrs. C. C. Rosenfield of Rock Island was elected State

Vice President of the Woman's Auxiliary to the Illinois Master Plumbers' Association, at the state convention.

It was decided to give five dollars to the Red Cross funds of Moline and Rock Island. At the close of business lovely refreshments were served in the dining room and the remainder of the afternoon was spent in a social way.

The meeting adjourned, to meet March 9 with Mrs. Walter Forssman as hostess, at the Green Tea Pot Inn in Moline.

Mrs. Leon Blaisdell of Gardner, president of the Maine Women's Auxiliary; Mrs. N. M. Knudsen of Portland, vice president of Auxiliary; Mrs. John Davis, of Portland, Me. Photos taken at the recent convention of the Maine Women's Auxiliary

New Officers Are Elected in Pasadena

Eleven members were present at the recent meeting of the Pasadena, Calif., women's auxiliary. An election of officers took place, at which time the following were chosen to direct the affairs of the auxiliary: Mrs. W. H. Swihart, president; Mrs. T. G. Graham, vice president; Mrs. A. C. Hanson, secretary-treasurer; Mrs. George Shirk, sergeant-at-arms. Monthly dinners are held on the first Tuesday of each month for the merchant plumbers, their wives, families and friends, with card parties following.

South Side Auxiliary Holds Annual Meeting

The February meeting of the South Side Women's Auxiliary of Chicago was held on Wednesday, February 4, at the Broadview Hotel. Hostesses were Mesdames Wm. F. Hildeman, G. A. Larson, O. R. Larson and Miss J. Finn. Thirty-four members and one guest enjoyed the delicious luncheon.

Following the luncheon, the usual regular meeting and the election of officers took place.

The officers for the ensuing year are: Mrs. Fred W. Hager, president; Mrs. J. J. Quinlan, vice president; Mrs. Howard D. Jacobs, secretary, and Mrs. B. C. Klein, treasurer.

Mrs. Quinlan, chairman of the entertainment committee, gave a very good report, which included the wonder party held at the Medinah Athletic Club in January, and also the wonderful program covering the social activities of the past year.

Other fine reports were given by Mrs. Klein, treasurer, and Mrs. Kratz, chairman of the sick committee.

At this time Mrs. Compton presented Mrs. Wm. F. Hildeman, state president, and Mrs. C. A. Bolton, state secretary, with beautiful bouquets of roses, compliments of the members of the auxiliary who wished to express their appreciation of the honor of having two of its members elected state officers.

The retiring president, Mrs. Chas. Harris, gave a very fine report for the year. In her report all the happenings of the year were reviewed. She expressed her thanks to the officers and committee chairmen and everyone pres-

Dehn's ACME Grease Traps

Double Trapped Water Cooling Catch Basins

EIGHT SIZES. For residences, restaurants, hotels, boarding houses, large and public institutions, etc.

Positively congeals the grease in the Basin and is readily accessible for removal. Prevents danger of clogged waste pipes and drainage systems. More than 30 years experience originating and designing Modern Sanitary Appliances is your assurance of satisfaction.

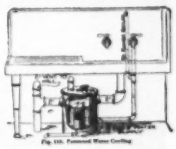

Fig. 113 Patented Water Cooling Correct Installation

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COMPOUND INJECTOR & SPECIALTY CO.

George J. Dehn, S. E., Pres. 419-421 D. N. Laramie Ave., Chicago, Ill.

Top the Job with Overtons

Roof Flashings are one of those "small details" that can cause a lot of trouble if they're not selected right and installed right. If you top your job with Overtons, you can be sure that selection, installation and satisfaction are of the best.

Order them from your jobber today

BUTLER MFG. CO., Minneapolis, Minn.

STAR NACO

The range boiler built to a standard and not to a price. Sold only to licensed plumbers—STAR-NACO Range Boilers cost a trifle more because of the extra years of service built into them. They offer long satisfaction to your customer and a fair profit to you.

Write for details.

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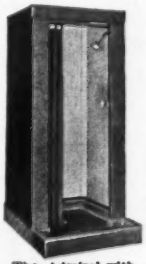
The Plumber's JOB-the Plumber's PROFIT



The Admiral with extended receptor and curtain

Fiat Shower Bath Compartments and Shower Doors

Whether building or remodeling . . . FIAT Shower Bath Compartments and Shower Doors mean double profits for you. Profit on the sale and Profit on the installation.

FIAT Shower Compartments are made in many sizes and designs . . . are of knock-down construction and can be installed on rough or finished floors. Permanent . . . absolutely leak-proof. Easy to install.

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Central Bldg., Y.M.C.A.
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In this 'Y' Building

LEADERS in young men's social welfare activities realize the importance of modern, sanitary equipment for convenience and comfort. That is why Halsey Taylor Drinking Fountains are the logical specification. Patented automatic stream control; constant, sanitary drinking-stream under every condition of service; freedom from annoyances so common in ordinary fountains . . . these are the outstanding features which recommend them for new construction and replacements . . . The Halsey W. Taylor Co., Warren, O.

Practical Automatic Stream Control

No other fountain has this sterling feature . . . the water is never too high, never too low, (regardless of pressure variation) stream is always *practical* and safe to drink from!

HALSEY TAYLOR
Drinking Fountains

HAVE YOU
an
IDEA
or
PATENT
on a
PLUMBING or HEATING DEVICE?

If so, we will be glad to consider its purchase or manufacture and sale on a royalty or other basis.

THE RICHMOND FOUNDRY & MANUFACTURING CO. Inc.
RICHMOND, VIRGINIA
"A DEPENDABLE SOURCE OF SUPPLY"

ent who had helped to make this last year such a happy and successful one.

Mrs. Harris, the retiring president, was presented by Mrs. Klein with a beautiful toilet set, and Mrs. Shaw, the retiring secretary, with beautiful butter spreaders, tokens of esteem and appreciation for the fine work they both had rendered.

The balance of the afternoon was spent playing bridge and 500. Mesdames Hager, Larson and Finn won honors in bridge, and Mrs. Parsons in 500.

Cincinnati Auxiliary Holds Monthly Meeting

The Cincinnati, O., Women's Auxiliary held its monthly meeting on February 11 at the American Building. The result of the election is as follows: Mrs. A. J. Murphy, re-elected president, Mrs. George Doench, re-elected vice president, Mrs. George Ammon, secretary, and Mrs. Ed. Frank, re-elected treasurer. The members were very much interested in a talk given by Mr. John Doherty, president of the Cincinnati Master Plumbers' Association. Mrs. A. J. Murphy, delegate to the state convention, reported the activities of the week.

Two of the local women were honored with offices at the recent convention held in Canton. Mrs. M. R. Manley, past president of the Cincinnati auxiliary and present director, was elected treasurer of the state, and Mrs. A. J. Murphy, president of the Cincinnati auxiliary, was appointed state director.

Portland, Ore., Auxiliary Holds Annual Meeting

The Portland, Oregon, Ladies' Auxiliary to the Master Plumbers' Association held its annual meeting on February 11th at the home of Mrs. T. Spreadborough. The election of officers was held and resulted in the re-election of all the officers. Following the business, a few of the members played cards. Luncheon, consisting of individual chicken pie, tomato jelly salad, rolls, coffee, royal angel food dessert, was served. Daffodils were used as table decorations. The hostesses were Mrs. Spreadborough, Mrs. Ed. Murphy and Mrs. George Kendall.

Mrs. C. J. Burns will entertain the auxiliary on March 11.

St. Paul Auxiliary Plans Social Monthly Meetings

The Ladies' Auxiliary to the St. Paul, Minn., Master Plumbers' Association held its regular meeting at the Degree of Honor Hall, February 12th. President Mrs. Axel Peterson outlined some of the plans for the coming year, including a social meeting each month in addition to the regular meeting, the purpose of which is to become better acquainted. Bridge and 500 were played after the meeting, at which 72 were present. Those on the committee were Mrs. Albert Lorch, chairman, assisted by Mrs. Walter Steimer, Mrs. Louis Zeuhls and Mrs. Fred A. Beier. A dainty luncheon was served. Mrs. Henry Benson of St. Cloud, Minn., was present, as was Mrs. Fred Stiller, president of the Minneapolis Auxiliary, and some of the members from Minneapolis.

Because the women have entertained their husbands at several social functions, the husbands reciprocated with a party at the West End Commercial Club.

Arizona Auxiliary Holds Monthly Meetings

From Mrs. H. Fliedner, secretary of the Arizona State Women's Auxiliary, we learn that the Phoenix auxiliary has been holding its meetings every month since its inception. She says: "Although, so far, our meetings have been more of a social nature, we feel that we have accomplished quite a bit in getting better acquainted and thereby getting a better foothold for a more active organization to come."

New Trade Literature

Davis Engineering Corp.'s New Folder

The Davis Engineering Corp., New York City, has issued a new four-page folder describing the apartment house domestic water heater of its manufacture. The folder contains a table giving capacities, dimensions, weight in pounds and list prices. In addition there are two sketches, one showing the heater connected to a sectional cast iron boiler and the other illustrating a steel boiler job.

"Matched Beauty in Plumbing Fixtures"

Kohler Co., Kohler, Wis., is distributing an attractive folder called "Matched Beauty in Plumbing Fixtures." The folder is printed in three colors. It is illustrated with reproductions of various of the company's fixtures and bath accessories, with the object of showing just what can be done in creating unity of style in the bathroom.

Folder of Buffalo Forge Co.

The Buffalo Forge Company, Buffalo, N. Y., is distributing a new folder describing blowers, fans and mill exhausters of its manufacture. Described also in the folder are the company's gas-fired units and one of its unit heater models. Each of the products is pictured, accompanied with descriptive reading matter.

Catalog of Economy Engineering Co.

Economy Engineering Company, of Chicago, has issued a new catalog describing its products. The catalog is bound in loose-leaf form in an attractive cover. Racks for storing barrels and drums, drain racks and hand-operated and electric lifters of the company's manufacture are illustrated and described. The catalog contains a number of pages of pictures which illustrate the use of the company's products in various industries. Data sheets and dimensions and capacities for the various products appear in the catalog.

"Some Uses of Air in Motion"

Niagara Blower Company, New York City, has just issued its Bulletin No. 16, which is entitled, "Some Uses of Air in Motion." The bulletin contains a mass of technical data, including performance tables for the company's line of fan coolers, several pages of tabular matter on cooling coils and a chart on dry bulb temperatures.

Folder of W. H. Johnson & Son Co.

W. H. Johnson & Son Co., Indianapolis, Ind., is distributing a folder which illustrates the radiator furniture of its manufacture. The folder is printed in several colors and shows the various designs of the company's products. Two charts are included. One shows the course of air in a room with an uncovered radiator. The other shows the course of air in a room equipped with radiator covering.

Pipe Measurements

"Measurements for Pipe Tradesmen" is the name of a book by Edward Bittel which just recently has been published. An idea as to what it covers may be obtained from the chapter headings which are as follows: 1—Fittings; 2—Measuring Points; 3—Measurements; 4—Method of Measuring; 5—Method of Transferring Measurements When Cutting Pipe; 6—Offsets with 45-degree Fittings; 7—Offsets with Standard Fittings Other than 90-degree; 8—Miscellaneous; and 9—Definitions.

A large number of line drawings are used to illustrate

WITH X-ray eyes you could not help but appreciate the superiority of Anderson Copper Tube Fittings. They would show you correct design, perfect workmanship and a joint that cannot leak.

Anderson Copper Tube Fittings are easy to make up. Only *three* different types of fittings are needed for an entire installation.

Write us for complete specifications and details and consult us about your copper tube plumbing problems.

The CHAPMAN VALVE MANUFACTURING CO.
INDIAN ORCHARD MASS.

YOUR FITTING PROBLEM
IS SOLVED *when you say*
"SQUARE GEE'S"
SQUARE Pipe
"GEE" Fittings
DRAINAGE, BRASS
MALLEABLE, CAST IRON
THE GRABLER MANUFACTURING CO.
CLEVELAND, OHIO
San Francisco · Los Angeles
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Why Invite Trouble? . . . .
To be worthy of its name a boiler feeder must be dependable at all times and under all conditions. That is why *certainty of operation* is the guiding principle behind the design of every detail in McDonnell & Miller Boiler Feeders. The *valves that stay new* in the M. & M. No. 28 Self-Cleaning Duplex Feeder, and the *isolated feed valve* in the McDonnell No. 30 Safety Feeder, are features that forestall every source of trouble. Ask for detailed description.
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McDONNELL & MILLER
Boiler Feeders
"Doing one thing well"
The new McDonnell No. 30 Safety Feeder for medium and small size boilers—the peer of single valve feeders. For large boilers, specify the M. & M. No. 28 Self-Cleaning Duplex Feeder—unsurpassed in its field.

36% MATERIAL 60% LABOR 4% PROFIT
40% 51% 9%
How do You Spend Yours?
TWO contractors were handed $100 each to install valves on two identical jobs. Any remaining surplus would be theirs.
One decided to save money on materials. So he spent $36 for valves which cost him $60 to install. This left him a profit of $4.
The other decided that good materials would cost less to install so he spent $40 for O-B valves and they cost only $51 to install. This left him a profit of $9. How do you spend yours?
Ohio Brass valves are so designed and machined as to give "an extra profit in the make-up".
Ohio Brass Co.
1189-V Mansfield, Ohio

MODERN HEATING EQUIPMENT
for all types of Buildings
HOFFMAN VALVES
HOFFMAN CONTROLLED HEAT
HOFFMAN-ECONOMY PUMPS
Write for Catalog
HOFFMAN SPECIALTY CO., INC.
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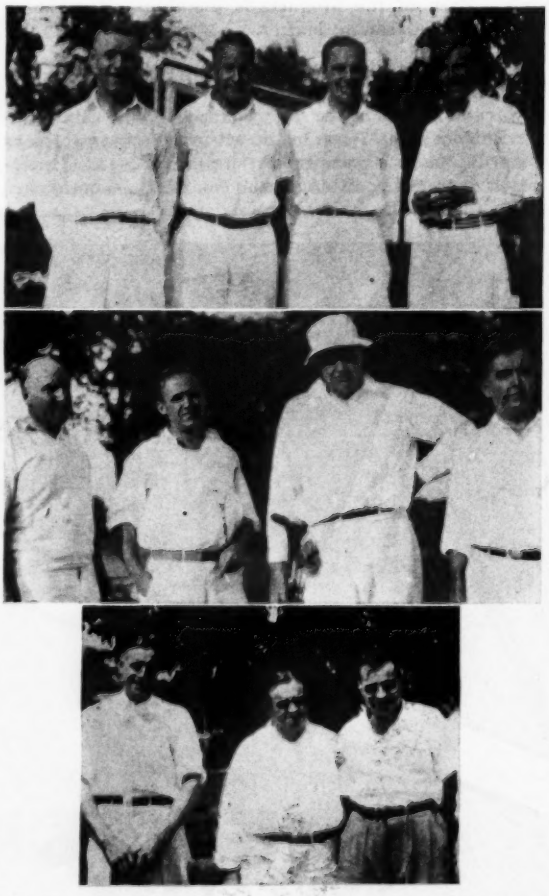
the methods given. Also, problems are presented with their solutions serving as examples of how to apply the information. The book is 4¾ in. by 7 in. in size and is attractively bound in a cloth, imitation leather cover. One section is devoted to a list of definitions explaining the terms used in the text. The price of the book is $2.50. It is published by the author, Edw. Bittel, 508 North Dearborn street, Chicago.

Pamphlet of Watts Regulator Co.

A pamphlet is being distributed by Watts Regulator Co., Lawrence, Mass., describing the company's line of steam, water and air specialties. The pamphlet is well illustrated.

Atlas Valve Co.'s Bulletin

The Atlas Valve Co., Newark, N. J., recently issued a bulletin of twenty pages in which is given full details and descriptions of the various types of temperature regulators of its manufacture. The descriptive matter is augmented by sectional views. Applications of its products, list prices, and tables for finding sizes of diaphram control valves required to heat a given quantity of water in gallons per hour are also given.



Top row: C. F. Olsen, Kewanee Boiler Corp., Chicago; E. J. Anderson, Sloan Valve Co., Detroit; Porter West, C. F. Church Mfg. Co., Chicago; Tom Brown, B. F. Reynolds & Co., Detroit. Middle row: H. M. Hart, Chicago; H. M. Armstrong, Detroit; J. F. G. Miller, Detroit; R. M. Stackhouse, Chicago. Bottom row: E. Sanger, Hotstream Heater Co., Detroit; C. A. Perry, C. A. Boyle & Co., Chicago; J. A. Hughes, Pacific Steel Boiler Corp., Detroit. Photos taken at the golf tournament between the Western Trade and Michigan Trade Golf Associations, at Battle Creek

Business Changes

Montesano, Wash.—W. S. Kerrigan has sold a half interest in the Montesano Plumbing Co. to Herbert Lanier.

San Francisco, Calif.—Michael Desiano has moved his plumbing and heating business from the old location at 5338 Mission street to 3117 Fillmore street, in this city.

San Francisco, Calif.—George A. Wara has moved his plumbing and heating business from 6427 Geary street to 5342 Geary street.

Nashville, Tenn.—The East Side Plumbing Co. has moved to larger quarters at 66 Bridge avenue. J. B. Sullivan is president of the organization.

Nashville, Tenn.—P. J. Nolan, plumbing and heating contractor, has moved his place of business from 46 Bridge avenue to 55 Bridge avenue, in this city. Mr. Nolan has been in business in Nashville for many years.

Lindsay, Okla.—Frank G. Ward has succeeded to the plumbing, heating and lumber business of Ward & Clark.

San Francisco, Calif.—Joseph C. Casey has moved his plumbing and heating business from 333 Hickory street to 640 Fulton street, in this city.

Clayton, N. Y.—Bertram and Reinman, plumbing and heating contracting firm, has moved from its former location in the H. R. Wood block to larger quarters in the Reinman block, in Riverside drive.

Boston, Mass.—E. T. Keefe, well known Boston heating contractor, has dissolved the firm of E. T. Keefe Company and is now devoting his entire attention to the Underground Construction Company, a subsidiary to the Badger Company. Mr. Keefe for several years has divided his time between the two concerns but found it impossible to give either the proper attention, hence the dissolution of the firm bearing his name.

Cambridge, Mass.—Frank E. Cassidy, local plumbing

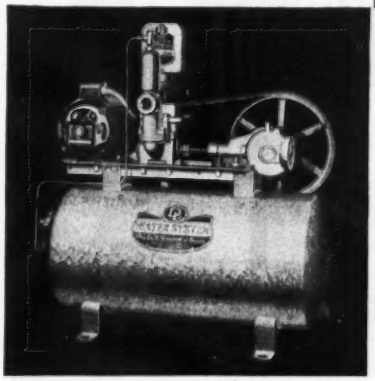
Top row: F. M. Gabbert, J. W. Forsythe, W. H. Rainwater and B. Blackburn. Bottom row: B. F. Blair, Robert Allmon, R. M. Clark and A. W. Swan. Photos taken at golf meet of the Plumbing and Heating Club of San Francisco

YOU'RE BOUND
to like this

◇

Simply make two connections and the D-L Water System is installed

. . . TIME SAVED IS MONEY MADE



℞ Electric Residence Water Systems, Delco-Light Electric Power and Light Plants and Delcogas for household and commercial use are sold and warranted by Delco Appliance Corporation.

There's no advantage in making a profit on the sale of a water system if you have to lose it all on installation costs and service calls.

That's why more and more plumbers are turning to ℞ Water Systems for profits they can *keep*.

Here's a water system that's the easiest thing to install you've ever seen. It comes to you assembled as a unit—all ready for connection to the suction and service lines.

And once a ℞ Water System is installed, service calls cease to be a problem. The new Automatic Air Volume Control prevents even the smallest tanks from getting water logged. And the entire system is built to give years of trouble-free service.

℞ *Water Systems are easier to sell!* They're nationally advertised, include models for all requirements, and priced as low as $75, f.o.b. factory, complete with tank.

Write today for all the facts.

℞ SEPTIC TANKS... Made of heavy gauge high-grade copper bearing steel. Oxy-acetylene welding eliminates danger of leaks. Inlet and outlet openings welded on. Heavy coating inside and out prevents corrosion.

THE GOLD STANDARD OF QUALITY

ELECTRIC WATER SYSTEMS

DELCO APPLIANCE CORPORATION,
Dept. B-25, Rochester, N. Y.

Please send facts that show how I can increase sales and profits with ℞ Water Systems. 0-133

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TESTED BRASS FITTINGS

Every Jenkins Brass Fitting is put to a rigid test before it is put on the market. When a fitting passes this test it is absolutely perfect in every detail and ready to stand up on the job under the hardest conditions.

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JENKINS MANUFACTURING CO.
Bloomfield, New Jersey

INCREASE YOUR PROFITS

There's a good margin for you
And satisfied customers too!

Sell Dole Air & Vacuum Valves

Write for full information.

THE DOLE VALVE COMPANY

How it looks inside Dole 2-B Vacuum Valves

1913 Carroll Ave., Chicago

PORCELAIN COCK HOLE COVERS

No. 8339

WITH OR WITHOUT CHAIN STAY

—

No. 8338

ASK YOUR JOBBER

J. B. WISE, INC. :: WATERTOWN, N. Y.

and heating contractor, moved into a new building which he has had erected, on February 15. Mr. Cassidy built the new office and shop on the site of his old one, 60 Broadway. The new headquarters consists of an attractive entrance office, a drafting room and private offices in addition to a complete shop, storeroom and garage.

New Business Ventures

Brooklyn, N. Y.—With a capital of $20,000, the Eastern Heating Service, Inc., has been chartered. It is planned to establish and operate a heating engineering and contracting business in South Brooklyn. E. Morganlander, 1440 Broadway, New York City, represents the new firm.

Brooklyn, N. Y.—The R. C. Plumbing and Heating Company has been organized and incorporated, with a capital of $5,000, to establish and operate a plumbing and heating engineering and contracting business. The new firm is represented by M. Zektzer, 44 Court street.

Los Angeles, Calif.—The Hoyt Company has engaged in the plumbing business at 2120 Hillhurst avenue, under the management of Charles H. Hoyt, 521 East Chestnut street, Glendale, Calif.

Portland, Ore.—The Avenue Plumbing and Heating Company is the name filed early this year by R. D. Rennie for his business located at 1052 Hawthorne avenue.

Portland, Ore.—The Northwestern Plumbing and Heating Company has opened for business at 1210 Hancock street near Sandy boulevard. The managers in charge are D. L. Conley and F. G. Youngeberg. Mr. Conley has been previously with the Stark-Davis company for eight years and Mr. Youngeberg has operated his own plumbing shop for nine years.

San Francisco, Calif.—The Richmond Plumbing & Heating Service has engaged in business at 5742 Geary street.

Silver City, N. M.—D. B. Robertson, Inc., has been chartered to engage in the plumbing and heating business, with a capital stock of $25,000, by A. L. Robertson, D. B. Robertson and David Robertson.

Long Beach, Calif.—Mack's Plumbing Co. has engaged in the plumbing and heating business in both this city and Compton under the ownership of H. H. McIntosh of 2141 Harding street, Long Beach, and H. B. McCurdy of 4020 Vermont street, Long Beach.

San Pedro, Calif.—The Garrett Plumbing Co. has engaged in the plumbing and heating business at 3333 Pacific avenue, under the management of B. B. Garrett.

Los Angeles, Calif.—The J. F. Delaney Co. has engaged in the plumbing and heating business at 2515 West Ninth street. John F. Delaney, 10736 Greyden street, North Hollywood, and Frederick F. Caserio, 5253 Leghorn avenue, Van Nuys, are associated with the firm.

Portland, Ore.—Roy N. Flack and F. J. Rogers have engaged in the plumbing and heating business under the name of Century Heating Co.

Okanogan, Wash.—Frank Fickes has engaged in the plumbing and heating business in this city.

Milwaukee, Wis.—The Albert J. Schafer Plumbing & Heating Company has filed articles of incorporation to conduct a general plumbing and heating business in this city. The concern has $2,500 of authorized stock, divided into 25 shares at $100 par. Incorporators are Albert J. Schafer, M. J. Schafer and Christian H. Hellie.

Brooklyn, N. Y.—The Steadihot Heating Engineering Corporation has been chartered, with a capital of $5,000, to establish and operate a heating engineering and contracting business. The new firm is represented by I. H. Simon, 22 West Forty-second street, New York City.

Pipe —— Lines
Connected by LYT

BEFORE AND AFTER

Before

Taxi	$ 1.50
Two orchestra seats	11.00
Candy	2.00
Taxi	1.50
	$16.00

After

Carfare	.20
Movies	1.20
Carfare	.20
	1.60

And now the class in matrimonial economics can see plainly why two can live as cheaply as one.

"My wife is like an angel."

"Really"

"Yes. She's always up in the air, always harping on something, and she never has anything to wear."

GETTING BACK

Bridget had been discharged. Extracting a five dollar bill from the roll she received for her wages, she threw it to the dog Fido. Her mistress looked puzzled, of course, and then shocked when Bridget said: "Sure'n I niver fergit a friend; that's fer helpin' me wash the dishes."

CONSOLATION

Hush, little vacant lot,
Don't you cry,
You'll be a golf course
By and by.

P. G. N., Chicago.

The Blacksmith: "Now, Pat, I'm going to bring this horseshoe out of the fire and lay it on the anvil. When I nod my head, hit it hard with the hammer." And Pat did.

The subway, sobs a New Yorker, is getting so crowded these days that even some of the men have to stand up.

WOODEN PUNS

"The other night," says Dictaphone Dick, "we went to a wooden wedding anniversary. They had potato chips, plank steak, club sandwiches and cabinet pudding. Wooden that jar you? The only thing we didn't get was a slab in the face!"

THESE TWO BALANCE

Judge: "You pushed your wife out of the window?"

Prisoner: "Yes."

Judge: "Five dollar fine for endangering passers-by."

Judge: "You hit your husband with a chair? Pray tell me, why did you do it?"

Wife (sighing deeply): "Because, your honor, I couldn't lift the table."

APOLOGIES TO KIPLING

A fool there was
And he saved his rocks,
Even as you and I.
But he took them out
Of the old strong box
When a salesman called
With some wild-cat stocks.
And the fool was stripped
Down unto his socks,
Even as you and I.

CAMPBELL'S.

It may be the tail-end of winter—but it may also have a sting in it! L Y T

OIL BURNER
MANUFACTURERS
. DEALERS .
. CONSUMERS .

will meet at the

8th ANNUAL
Convention and
OIL BURNER
SHOW . . .

Philadelphia
April 13 to 18

No one should miss this outstanding event. A program has been planned embracing educational and social activities of special interest to dealers and others engaged in the business of oil heating. There will be an open session for dealers Tuesday afternoon, April 14th.

CONVENTION HEADQUARTERS
Ben Franklin Hotel, 9th and Chestnut Streets

SHOW HEADQUARTERS
Gimbel Bldg. (Across the street from the Ben Franklin)

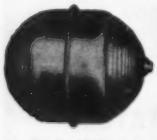
AMERICAN OIL BURNER ASSOCIATION

BY SPECIFYING Heggie-Simplex Steel Boilers, architects and building committees for many important structures have endorsed what Heggie's 39 years have accomplished—the most modern of heating boilers, in which scientific design combines every essential with preeminent quality.

HEGGIE-SIMPLEX BOILER COMPANY
JOLIET, ILLINOIS
Representatives in Principal Cities

Paragon SELF-CLOSING
FAUCETS
with renewable seats
SMOOTH ball-bearing action. Patented "Samson" Lock, which makes Paragon handles easiest to adjust without special tools. Longer wear—better action. A wide variety of bodies and handles. Write for folder on the complete line.
Through your Wholesaler
The CENTRAL BRASS Mfg Co.
PARAGON DIVISION
CLEVELAND O.

Stop pipe thread leaks
with SMOOTH-ON No. 1 in a
SMOOTH-ON CLAMP
Sizes for 1-in. to 12-in. pipe.
QUICK, easy, cheap Holds for the life of the line—any pressure, any temperature, iron, brass, or copper pipe. Get Smooth-On Clamps and Smooth-On No. 1 from nearest supply house or from us.
Write for the free Smooth-On Handbook.
SMOOTH-ON MFG. CO.
Dept. 12, 574 Communipaw Ave., Jersey City, N. J.
SMOOTH-ON



NO-SOL COPPER FLOATS

No-Sol Floats incorporate all features necessary to the satisfactory performance of a tank float.

Each float is individually tested and guaranteed.

INCORPORATED 1907
The AYLING & REICHERT CO.
3047 N. Erie St. Toledo, Ohio

Bath a Day Movement

Foster R. Fanning of Winter Park, Fla., has incorporated in his 1931 calendar the Bath a Day Idea, by using a large reproduction of the slogan cut: "A Bath a Day Keeps You Fit Every Way," in blue. Large numbers of plumbing contractors show the slogan cut on their letterheads and in their advertising, also using the small Bath a Day sticker for sealing envelopes. These, with the window transfer or the big poster in the store or shop serve to identify these contractors with this popular educational movement.

177

Each week requests are being received for copies of the twenty-minute program that has been worked out for use before Rotary, Kiwanis, Lions, and other civic service clubs. Simplicity itself, the program can be put on without any preparation whatever.

Also requests are continuing from school teachers for copies of "The Story of the Bath" and, as usual, such inquiries are referred promptly to local or state secretaries. Ask your local secretary (or your state secretary if you have no local) if such an inquiry has been received from your city or town. It may hold a fine publicity opportunity for you.

If you haven't read "The Story of the Bath," write for a complimentary copy.

Little Sentences That Sell

Write one of these BLACK BOARD EPIGRAMS on your window or bulletin board each day. Many master plumbers and heating contractors find them real business getters.

An ounce of straight goods beats a pound of hot air.

* * *

Don't class hens as vegetables because of their crops.

* * *

It takes only two crabs to make a pair of pinchers.

* * *

The more some people tell you the less you know.

* * *

Police court judges are fine-imposing men.

* * *

The tallest man in the world is not above criticism.

* * *

Hope is the key with which ambition is wound up.

* * *

The eyes do not teach love, but they have pupils.

* * *

The neck always comes under the head of meat.

* * *

Why can't one tan the hide of a dog with his bark?

* * *

Trying to stand upon one's dignity often results in a hard fall.

* * *

Don't worry because you have nothing to worry about.

◆

Detroit, Mich.—Freyn Brothers, engaged in the plumbing and heating business at 3850 Michigan avenue, have incorporated their business under the name of Freyn Brothers of Michigan, Inc.

Los Angeles, Calif.—The Reliable Plumbing Service, Ltd., has been incorporated, with a capital stock of $10,000, by James P. Cassidy, of Glendale; Thomas Hackney, of Burbank, and Benj. P. Riskin, of Los Angeles.

PATENTS

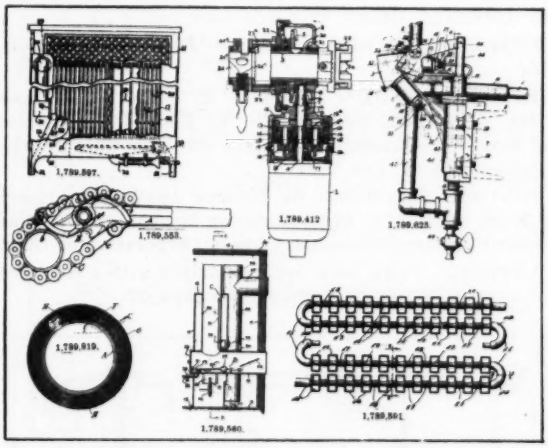
Heating Department

1,789,597. Gas Radiator. William T. Rasch, New York, N. Y., assignor to American Gas Products Corporation, New York., N. Y., a Corporation of New York.

1,789,553. Chain Pipe Tongs. Willard C. Kress, Kenmore, N. Y., assignor to J. H. Williams & Co., Buffalo, N. Y., a Corporation of New York.

1,789,412. Portable Power-Driven Tool. Herman W. Oster and Glenn D. Sleeth, Cleveland, Ohio, assignors to the Oster Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio.

1,789,625. Humidifier. Alfred M. Goodloe, Bradford, Pa., assignor, by mesne assignments, to American Air Filter Company, Inc., Louisville, Ky., a Corporation of Delaware.

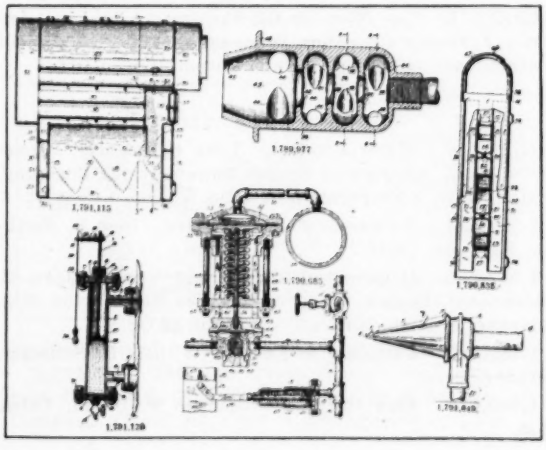


1,789,819. Pipe Insulation. Edward F. Jones, San Francisco, Calif., assignor to The Philip Carey Manufacturing Company, a Corporation of Ohio.

1,789,560. Heating, Ventilating and Humidifying Appliance. Charles A. Moore, Edina, Minn.

1,789,591. Heat-Exchange Apparatus. Patrick J. McIntyre, Detroit, Mich., assignor to Wolverine Tube Company, Detroit, Mich., a Corporation of Michigan.

1,789,411. Portable Power-Driven Threading Tool, Herman W. Oster and Glenn D. Sleeth, Cleveland, Ohio, assignors to the Oster Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio.



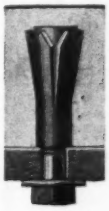
CUT COSTS

Give your customer a better job by using

PHILLIPS SELF DRILLING EXPANSION SHELLS

Flush Type Shell and Expander

Holder for Installing Shells by Hand. Drill the Hole, Expand the Shell and Remove Holder. A Quick and Easy Job for Anybody.



For Fastening anything to Concrete and Stone

Write for No. 3 Booklet

A NEW SHARP-DRILL FOR EVERY HOLE

PHILLIPS DRILL COMPANY

1537 Cortland St. Chicago, Ill.

DEMAND *the New* SELF-STARTING HACK SAW BLADE

THE sooner you begin to use the *new* Mil Flex DUPLEX, the sooner you will appreciate the truly remarkable qualities of this blade as compared with the old style hack saw blade.

You'll find it the easiest starting, fastest cutting blade you ever used. The fine tooth section of the Mil Flex DUPLEX *starts the cut on the first stroke,* and it cuts in a clean, straight line precisely where you want it.

This new blade is especially adapted to the work of heating and plumbing contractors, and its use will show a great saving in labor costs.

If you cannot obtain the Mil Flex DUPLEX from your jobber or dealer, write us direct.

The HENRY G. THOMPSON & SON CO.
Estab. 1876 New Haven, Conn., U. S. A.

Made in 14/28-pitch and 18/36-pitch. The fine teeth start the cut like the feed screw of an auger bit.

Also the special 24/36 tooth combination, an excellent blade for plumbers.

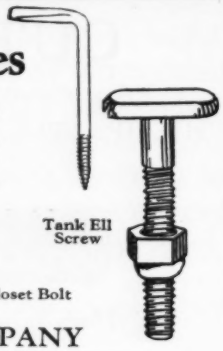
Ask for MILFLEX DUPLEX

PATENTED U.S.A.

Hindley Specialties

Place your 1931 order for Hindley Specialties today. A low stock on these necessities means money and time loss for you.

Write us for complete details



HINDLEY MFG. COMPANY
Valley Falls :: R. I.

COPPER

is now recognized as the last word in modern, rust-proof plumbing. Its general use has been made possible by Nibco Fittings. Thousands of Nibco installations are giving perfect satisfaction. Write for full information about the complete service today. Ask for Bulletin A-200

NORTHERN INDIANA BRASS COMPANY
Elkhart, Indiana

Have you any used tools?

No doubt you have. Chances are, they are lying somewhere around your shop. Possibly new tools have replaced the old. These old tools will bring you dollars if advertised in the "For Sale" columns of DOMESTIC ENGINEERING. Some plumber in another locality may be waiting to obtain these tools, in good condition, at reduced prices. The very low rate of 8c per word makes the Classified Page a good buy.

1,791,115. Boiler. Carlos E. Bronson, Kewanee, Ill., assignor to Kewanee Boiler Corporation, Kewanee, Ill., a Corporation of Delaware.

1,789,977. Oil Burner. Robert C. Hopkins, Alliance, Ohio.

1,791,120. Water-Level-Indicator for Boilers. John J. Cain, Bayonne, N. J.

1,790,685. Regulating Apparatus. Charles M. Terry, Decatur, Ill., assignor to A. W. Cash Company, Decatur, Ill., a Corporation of Delaware.

1,790,535. Radiator. James R. Coe, Waterbury, Conn., assignor to The American Brass Company, Waterbury, Conn., a Corporation of Connecticut.

1,791,649. Pipe Reamer. William W. Vosper, Toledo, Ohio, assignor to The Toledo Pipe Threading Machine Co., Toledo, Ohio, a Corporation of Ohio.

1,791,095. Electrical Water Heater. William Wesley Hicks, San Francisco, Calif.

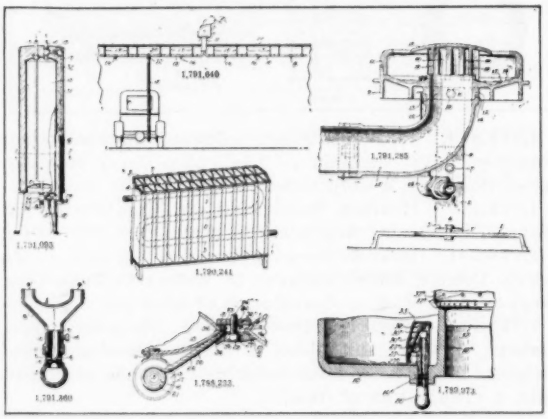
1,791,640. Ventilating Apparatus. Benard E. Rodin, East Cleveland, Ohio.

1,791,285. Oil Burner. Raney J. Roberts, Detroit, Mich.

1,790,241. Radiator. Thomas E. Murray, Jr., and Irving T. Bennett, Brooklyn, N. Y., assignors, by direct and mesne assignments, to Murray Radiator Corporation, a Corporation of New York.

1,791,360. Gas Burner for Heating Appliances. Harry E. Kerr, Cleveland, Ohio, assignor to The Barber Gas Burner Company, Cleveland, Ohio, a Corporation of Ohio.

1,788,233. Valve Lock in Combination with a Radiator and a Valve. Charles A. Fingal, Chicago, Ill.



1,789,973. Gas Pilot for Oil-Burning Apparatus. Augustus J. Frame, Columbus, Ohio, assignor to Franklin Oil Heating, Inc., Columbus, Ohio, a Corporation of Ohio.

Plumbing Department

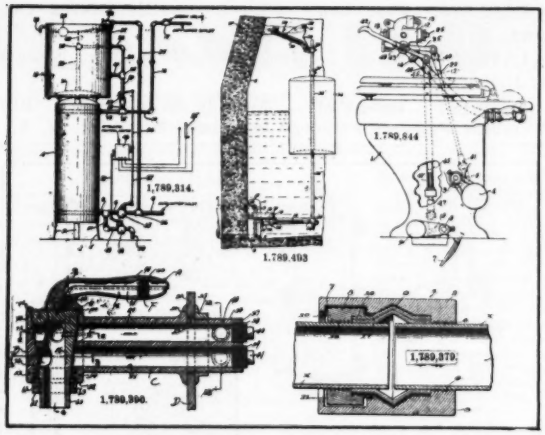
1,789,314. Water Softener. Lynn G. Lindsay, Minneapolis, Minn., assignor to Trupar Manufacturing Company, Dayton, Ohio, a Corporation of Ohio.

1,789,493. Automatic Flushing Valve. John K. Northrop, Burbank, Calif.

1,789,844. Double-Pan Hopper and Valve. John C. Schumacher, Dayton, Ohio, assignor to The Dayton Mfg. Company, Dayton, Ohio, a Corporation of Ohio.

1,789,390. Combination Faucet. William E. Potteiger, Hershey, Pa.

1,789,379. Pipe Coupling. Stephen V. Dillon, Tulsa, Okla.

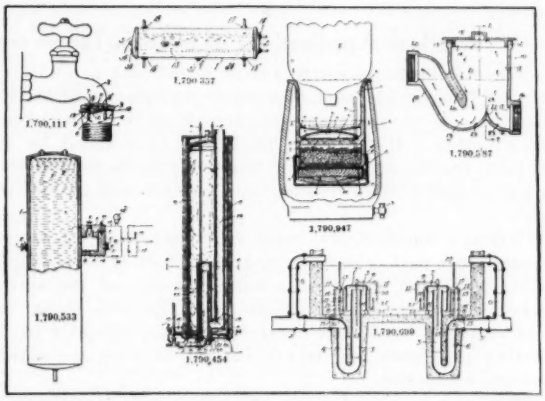


1,790,111. Faucet Clamp. Lorenzo H. Pike, Brooklyn, N. Y., assignor to Brass Goods Manufacturing Co., Brooklyn, N. Y., a Corporation of New York.

1,790,357. Tank for Hot-Water Systems. Elmer S. Stack, Somerville, Mass.

1,790,947. Water Filter. Lloyd E. Rabjohn and Ralph W. Hollenberg, Oakland, Calif., assignors to Cool Springs Filters, Inc., San Francisco, Calif., a Corporation of California.

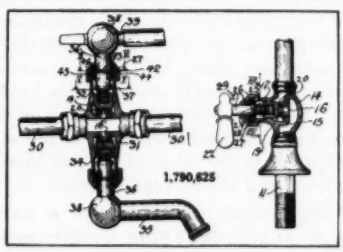
1,790,587. Trap. Willard J. Luff, Cleveland Heights, Ohio.



1,790,454. Water Heater. Thomas G. Arrowsmith, San Francisco, Calif.

1,790,699. Distributing Tank. James W. Cox, Chicago, Ill., assignor to Pacific Flush Tank Company, Chicago, Ill., a Corporation of Illinois.

1,790,533. Heating-Control Attachment for Hot-Water Boilers. Robert F. Campbell, Miami, Fla.



1,790,625. Combination Basin and Shampoo Mixing Faucet with Swinging Spout. Richard Patrick Kent, Wilmette, Ill., assignor to Street & Kent Mfg. Company, Chicago, a Corporation of Illinois.

1,790,358. Lawn Sprinkler Head. Claude U. Tyrrell, Pasadena, Calif.

1,791,531. Indirect Water Heater. Clarence H. Morrow, Cleveland, Ohio, assignor to The Hotstream Heater Company, Cleveland, Ohio, a Corporation of Ohio.

CHALLENGE BRAND
Rust Proof
PIPE NIPPLES

No matter what you select from the CHALLENGE Line you are assured of superior quality. Every CHALLENGE BRAND NIPPLE is made of NEW pipe cut to accurate length, threaded carefully and checked to **Briggs Standard.** Rust resisting drying oil coating prevents rusting. Sold only through jobbers.

Wrought
Iron
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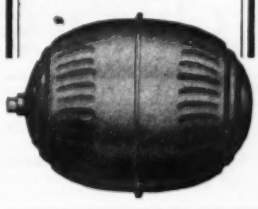
THE REPUBLIC TRIP LEVER DRAIN
THE ONLY MECHANICAL DRAIN THAT IS 100% SANITARY
The REPUBLIC BRASS COMPANY
1623 EAST 45TH STREET CLEVELAND, OHIO

NEVER-SPLIT AND EVERNU
QUALITY TOILET SEATS
Sheet Covered—Hard Rubber—Varnished—Sprayed—All Models
All Colors—All Hinges—Patented and Guaranteed
"NEVER-SPLIT" (Hidden Screw Construction) and "EVERNU" (Hard Rubber) Seats are approved by leading architects, builders and dealers everywhere. Get prices from your jobber. Write us for new catalog, cross sections and sales helps.
NEVER-SPLIT SEAT CO., Evansville, Ind., U. S. A.

Toledo Solderless Floats
From your jobber



Water conditions vary in most every section of the country. To meet these changing conditions, tank trimmings, particularly floats, must be carefully designed and built. Only the best of materials plus an extra knowledge of floats goes into every Toledo. Use them where ordinary floats have cracked, broken or leaked.
Order them from your jobber.
The Reichert Float & Mfg. Co.
2238 Smead Avenue
Toledo Ohio

Hotel Hollenden

THEO. DEWITT, *Vice President and General Manager*

CLEVELAND

announces **Revised Rates**

Following the trend of the times, Cleveland's leading hotel announces the following changes in room rates — effective immediately

ALL FORMER

$3.50 ROOMS *NOW* **$3.00**

$4.00 ROOMS *NOW* **$3.50**

$4.50 ROOMS *NOW* **$4.00**

4-station selective Radio now being installed in every Hotel Hollenden room

THE PARIS OF AMERICA

NEW ORLEANS

New St. Charles

One of America's Leading Hotels
ACCOMMODATING 1000 GUESTS

ALFRED S. AMER & CO., LTD.
NEW ORLEANS, LA.

Send for descriptive folder, illustrated Mardi Gras Program for the asking.

Valorisation offices for all transportation lines in lobby

HOME OF WINTER RACING

Sensible Rates

Garage Attached

The Breakers

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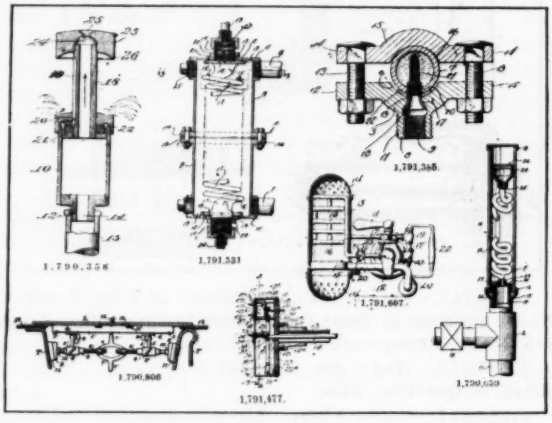
1,791,385. Pipe Tap. John L. Skuttle, Mason City, Iowa.

1,791,607. Water Heater. Samuel Sambor, Newark, N. J.

1,790,806. Temporary Cover for Bathtubs and Other Plumbing Fixtures. George M. Gould, Brooklyn, N. Y.



1,791,477. Thermostat Mechanism. Harold D. Eaton, La Porte, Ind., assignor to Bastian-Morley Co., La Porte, Ind., a Corporation of Indiana.

1,790,659. Water Shock Absorber. Daniel A. Gillen and Frederick W. Seymour, Flushing, N. Y.

◆

Practical Applications of Friction Tape

When it is necessary to adjust a nut or a screw in an almost inaccessible part of a small machine, a little friction tape is of great service, according to Power Plant Engineering. If the part can barely be reached by the fingers, the tip of the longer finger should be wound with a bit of electrician's friction tape and pressed against the nut.

When a small screw must be inserted in an almost inaccessible part, wrap one end of a piece of tape around the screw head and then around the end of the screwdriver which has been inserted in the slot along the screwdriver's blade and there will be no difficulty in inserting the screw if you are careful to keep the screwdriver in the slot.

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When the ferrule slips off the handle of one of your hand tools, cut a small piece of tape and place it smoothly and evenly over the end of the handle; then slip the ferrule over the tape and drive it home.

If you have to tighten nuts on bolts which turn around during the process and the heads are hard to reach or hold with a wrench, just put one or two bits of friction tape under the bolt heads and there will be no more trouble in tightening them. When it is necessary to hold together pieces of metal which are slightly tapered and the clamps or vise jaws keep slipping off, place a bit of tape under each clamp foot or screw or between the vise-jaws and the tapered pieces and thus avoid slipping.

When a split pulley slips on its shaft, remove it and wind a single thickness of friction tape evenly and smoothly around the shaft and tighten the pulley in place and it will slip no longer. Tape wrapped around a center-punch, cold chisel or other tool that may have become smooth and "slick" through use will make the handling of such tools much more convenient.

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PIPE COUPLING BUYERS
In The Country

Write us about your surplus pipe couplings

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8000 MILES PLANNED FOR 1931

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OVER 500 MORE TOWNS TO BE ADDED IN 1931

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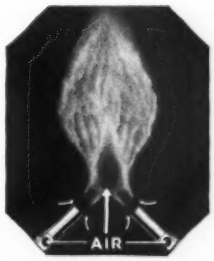
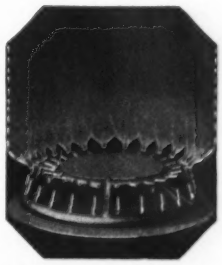
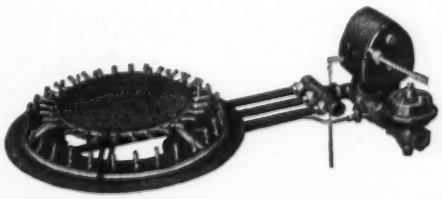


The BARBER Superhot twin flame, greater efficiency than mechanical mixer type burners.



The BARBER Burner applies the flame directly to heating surfaces of boiler or furnace.



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that's why we made this test

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IT HAS ALREADY REACHED
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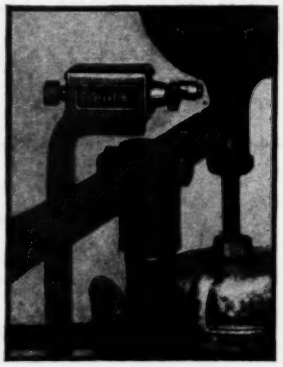
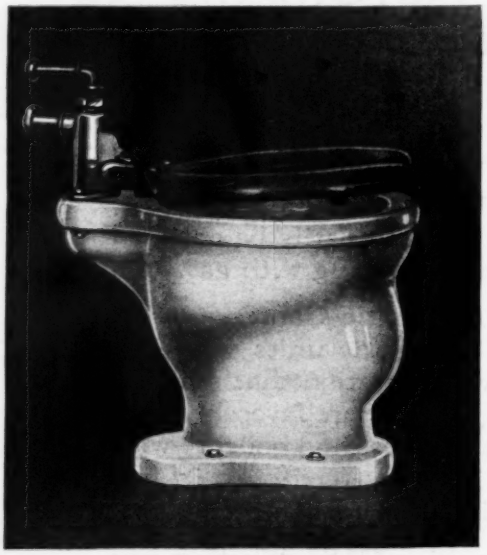


Actual photograph of the counter on the Vogel Endurance Test showing closet has flushed 269,116 times



Vogel Number Ten-A 6eat-action Closet combination with tank concealed

Vogel Number Ten. A sturdy seat-action closet combination with exposed tank

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